

# **On the syntax of Long Verb Movement**

Thesis submitted to the University of London in partial fulfilment of  
the requirements for the degree of Doctor of Philosophy

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## 0.1 Abstract

The topic of this thesis is the construction known as *Long Verb (Head) Movement* (LVM). It is illustrated below, with data taken from Serbo-Croat, which is also the main language under discussion. (1a) illustrates the underlying order of verbs. (1b) and (1c) are patterns generated by LVM. In the (b) example,  $V_2$  is preposed over  $V_1$ , while in the (c) example  $V_3$  crosses over the sequence of two verbal elements i.e.  $V_1$  and  $V_2$ . LVM has several properties suggestive of head chain formation: (i) it is clause bound, (ii) it results in adjacency between  $V_1$  and the fronted verb, (iii) it is incompatible with VP fronting, etc. If LVM constructs  $X^0$  chains, then it also involves a violation of the Head Movement Constraint (HMC). Therefore, the major theoretical issue LVM data raise is that of the locality of head movement.

- (1) (a) *Petar je bio svirao čelo.*  
                     $V_1$   $V_2$   $V_3$   
          Peter-nom aux been played cello-acc  
          ‘Peter had played the cello.’
- (b) *Bio je svirao čelo.*  
      $V_2$   $V_1$   $V_3$
- (c) *Svirao je bio čelo.*  
      $V_3$   $V_1$   $V_2$

In this thesis I argue that the data in question need not be analysed as non-local  $X^0$  displacement. I recognise two types of LVM: local LVM as in (1b), and non-local LVM as in (1c). I argue that local LVM should be understood as head movement. For these data an analysis which does not involve a violation of the HMC, either by long head movement, or excorporation, is available. Non-local LVM, on the other hand, is argued to be remnant VP displacement. I show that several properties of these constructions can be understood by assuming certain restrictions on the lower bound of locality of XP movement.

# Contents

|          |                                                     |          |
|----------|-----------------------------------------------------|----------|
| 0.1      | Abstract . . . . .                                  | 2        |
| 0.2      | Acknowledgements . . . . .                          | 7        |
| <b>1</b> | <b>Introduction</b>                                 | <b>8</b> |
| 1.1      | The pattern . . . . .                               | 14       |
| 1.2      | Three classes of auxiliaries . . . . .              | 17       |
| 1.3      | Clause boundedness of LVM . . . . .                 | 20       |
| 1.4      | Adjacency requirement . . . . .                     | 21       |
| 1.5      | LVM in embedded and matrix clauses . . . . .        | 23       |
| 1.6      | Clause-initial placement . . . . .                  | 23       |
| 1.7      | Blocking effects . . . . .                          | 24       |
| 1.7.1    | Subjects . . . . .                                  | 25       |
| 1.7.2    | Sentential adverbs . . . . .                        | 26       |
| 1.7.3    | The clitic <i>li</i> . . . . .                      | 27       |
| 1.7.4    | Negation . . . . .                                  | 28       |
| 1.8      | LVM and VP fronting . . . . .                       | 30       |
| 1.8.1    | Incomplete VP topicalisation . . . . .              | 31       |
| 1.9      | The discourse properties of LVM sentences . . . . . | 32       |
| 1.10     | Local and non-local LVM . . . . .                   | 33       |
| 1.11     | LVM and pronominal clitics . . . . .                | 37       |

## CONTENTS

---

|                                                               |           |
|---------------------------------------------------------------|-----------|
| 1.12 Conclusion . . . . .                                     | 41        |
| 1.13 The structure of the thesis . . . . .                    | 42        |
| <b>2 LVM and the syntax of clitic auxiliaries</b>             | <b>44</b> |
| 2.1 Auxiliary types and LVM . . . . .                         | 44        |
| 2.2 SC clitic auxiliaries . . . . .                           | 47        |
| 2.2.1 Present tense clitic forms of <i>to be</i> . . . . .    | 48        |
| 2.2.2 Present tense forms of <i>to want</i> . . . . .         | 51        |
| 2.2.3 Aorist forms of ' <i>to be</i> ' . . . . .              | 52        |
| 2.3 Negative auxiliaries . . . . .                            | 54        |
| 2.4 Placement of SC clitic auxiliaries . . . . .              | 56        |
| 2.4.1 The basic pattern . . . . .                             | 57        |
| 2.4.2 Delayed clitic placement . . . . .                      | 58        |
| 2.4.3 Split constituents . . . . .                            | 62        |
| 2.5 Prosodic Inversion . . . . .                              | 66        |
| 2.5.1 LVM as phonological operation . . . . .                 | 68        |
| 2.6 Syntactic accounts of clitic placement . . . . .          | 72        |
| 2.6.1 LVM as Participle-to-C . . . . .                        | 77        |
| 2.7 Last Resort and triggers for LVM . . . . .                | 81        |
| 2.8 SC clitics and variable pronunciation of traces . . . . . | 83        |
| 2.9 Conclusion . . . . .                                      | 88        |
| <b>3 LVM as a violation of locality</b>                       | <b>90</b> |
| 3.1 The properties of head chains . . . . .                   | 91        |
| 3.2 Head movement and locality . . . . .                      | 94        |
| 3.2.1 Formal expressions of the HMC . . . . .                 | 98        |
| 3.3 Violations of the HMC . . . . .                           | 100       |
| 3.3.1 Stylistic Fronting . . . . .                            | 100       |
| 3.3.2 Excorporation . . . . .                                 | 104       |

---

## CONTENTS

|          |                                                                          |            |
|----------|--------------------------------------------------------------------------|------------|
| 3.4      | Long head movement analyses of LVM . . . . .                             | 107        |
| 3.4.1    | Ramifications of long head movement approaches . . . . .                 | 111        |
| 3.4.2    | Empirical issues . . . . .                                               | 112        |
| 3.5      | LVM and excorporation . . . . .                                          | 115        |
| 3.6      | Conclusion . . . . .                                                     | 121        |
| <b>4</b> | <b>LVM as complex predicate formation</b>                                | <b>122</b> |
| 4.1      | Direct merger . . . . .                                                  | 122        |
| 4.1.1    | PP-complements . . . . .                                                 | 125        |
| 4.1.2    | Remnant VP-topicalisation . . . . .                                      | 127        |
| 4.2      | Complex predicate formation and LVM . . . . .                            | 131        |
| 4.3      | Deriving the properties of LVM . . . . .                                 | 133        |
| 4.3.1    | Word order . . . . .                                                     | 133        |
| 4.3.2    | Intervening elements . . . . .                                           | 135        |
| 4.3.3    | A trigger for restructuring . . . . .                                    | 138        |
| 4.3.4    | Gapping . . . . .                                                        | 141        |
| 4.3.5    | On inverse merger . . . . .                                              | 145        |
| 4.4      | Conclusion . . . . .                                                     | 153        |
| <b>5</b> | <b>Local vs. non-local LVM</b>                                           | <b>154</b> |
| 5.1      | Against head movement analyses of LVM . . . . .                          | 155        |
| 5.2      | Two types of LVM . . . . .                                               | 158        |
| 5.2.1    | Local LVM . . . . .                                                      | 158        |
| 5.2.2    | Non-local LVM . . . . .                                                  | 159        |
| 5.3      | LVM over clitic and non-clitic auxiliaries . . . . .                     | 161        |
| 5.4      | X <sup>0</sup> vs. XP movement . . . . .                                 | 163        |
| 5.4.1    | When is XP movement triggered? . . . . .                                 | 163        |
| 5.4.2    | The impossibility of simultaneous X <sup>0</sup> and XP movement . . . . | 166        |
| 5.5      | Remnant movement . . . . .                                               | 172        |

## CONTENTS

---

|          |                                                     |            |
|----------|-----------------------------------------------------|------------|
| 5.5.1    | Remnant movement approach . . . . .                 | 172        |
| 5.5.2    | Alternatives to remnant movement . . . . .          | 174        |
| 5.6      | The Anti-locality hypothesis . . . . .              | 175        |
| 5.6.1    | Small LVM remnants . . . . .                        | 177        |
| 5.6.2    | The impossibility of $[V_2 - V_3 - V_1]$ . . . . .  | 180        |
| 5.6.3    | VP fronting and LVM . . . . .                       | 181        |
| 5.6.4    | The clause-bound nature of LVM . . . . .            | 183        |
| 5.7      | The landing site of LVM remnants . . . . .          | 184        |
| 5.8      | Non-local LVM and blocking effects . . . . .        | 187        |
| 5.8.1    | The blocking effect of subjects . . . . .           | 187        |
| 5.8.2    | The clitic <i>li</i> . . . . .                      | 188        |
| 5.8.3    | Negative and emphatic auxiliaries . . . . .         | 192        |
| 5.9      | Remaining problems . . . . .                        | 193        |
| 5.9.1    | The blocking effect of sentential adverbs . . . . . | 193        |
| 5.9.2    | LVM in restructuring environments . . . . .         | 195        |
| 5.10     | Conclusion . . . . .                                | 197        |
| <b>6</b> | <b>Conclusion</b>                                   | <b>199</b> |
| <b>7</b> | <b>Bibliography</b>                                 | <b>201</b> |

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# Chapter 1

## Introduction

The empirical domain of this dissertation is the construction known as *Long Head Movement* or *Long Verb Movement* (LVM). LVM is characterised by the displacement of the predicate over one or more verbal head positions. Consider the following data taken from Serbo-Croat (the verbs are marked in the order of merger, where the highest numbered verb is merged first). (1.1) illustrates the underlying word order. The auxiliary ( $V_1$ ) precedes the participle of ‘to be’ ( $V_2$ ), which in turn precedes the lexical verb ( $V_3$ ). (1.1b) and (1.1c) are patterns generated by LVM. In (b) the order of the participle of ‘to be’ ( $V_2$ ) and the auxiliary ( $V_1$ ) is inverted, while in (c) the lowest verb is moved over the [ $V_1$ – $V_2$ ] sequence.

(1.1) (a) *Petar*            *je*            *bio*            *čitao*            *knjigu*.  
                               $V_1$              $V_2$              $V_3$   
                              Peter–NOM    aux–3SG    been–PART    read–PART    book–ACC  
                              ‘Peter had read the book.’

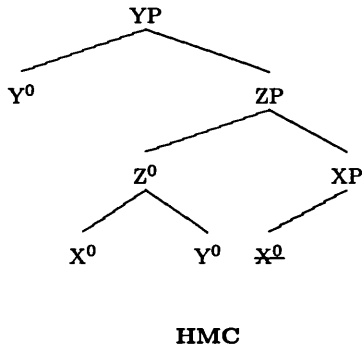
(b) *Bio<sub>i</sub>*            *je*            *t<sub>i</sub>*            *čitao*            *knjigu*.  
                               $V_2$              $V_1$              $_3$   
                              been–PART    aux–3SG    read–PART    book–ACC  
                              ‘He had read the book.’

- (c)  $\check{C}itao_i$        $je$        $bio$        $t_i$        $knjigu$ .  
 $V_3$        $V_1$        $V_2$   
read-PART    aux-3SG    be-PART    book-ACC  
‘He had read the book.’

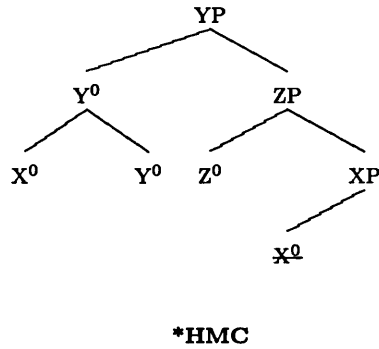
The fronting of the participle is more often than not thought of as an instance of  $X^0$  displacement (Abels 2000, Ackema and Camdzic 2003, Bošković 1995, 2001, Caink 1999, Lambova 2002, Lema and Rivero 1989, Progovac 1996, Rivero 1991, 2001, Roberts 1993a, forth., Schafer 1997, Wilder and Čavar 1993, 1994, Williams 2003, etc). This is due to the fact that LVM has several properties suggestive of head chain formation: (i) it is strictly clause bound, (ii) there is an adjacency requirement between the fronted participle and the auxiliary, (iii) certain heads act as interveners, (iv) only the verbal head may front by LVM, (v) VP-topicalisation is impossible in the same context. An analysis in terms of phrasal movement is commonly ruled out on the basis of this latter point (the impossibility of VP topicalisation in the same context), as well as dissimilarities between LVM and Germanic remnant fronting.

Analyses of LVM in terms of  $X^0$  movement, however, introduce a significant theoretical problem. Head movement is standardly argued to be subject to strict locality conditions, descriptively expressed by the Head Movement Constraint (HMC) (Travis 1984). The HMC allows head chains to be constructed only with the closest c-commanding head node. In other words, the movement from a position  $X^0$  may only target the next node up i.e.  $Z^0$  in (fig. 1.1a). The HMC rules out representations of the type given in (fig. 1.1b), with  $X^0$  targeting  $Y^0$ , and skipping over the intermediate intervening head  $Z^0$ .

(Fig. 1.1a)



(Fig. 1.1b)

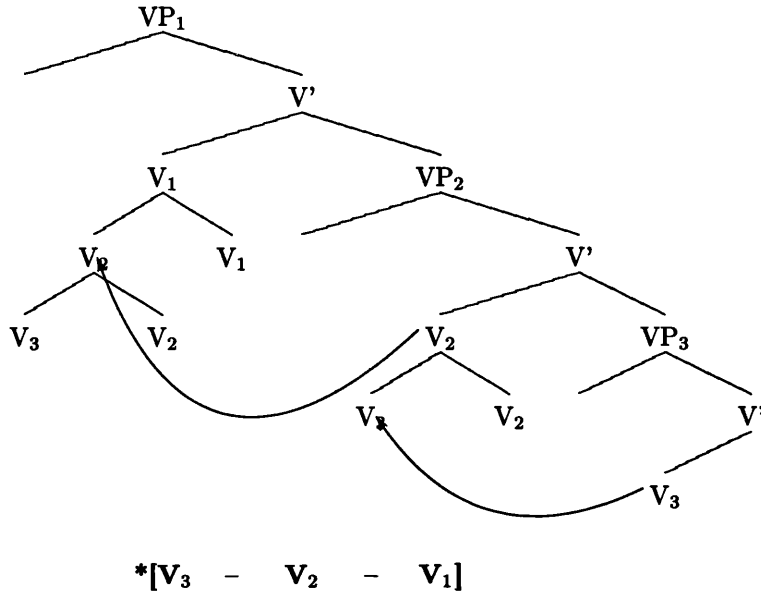


If LVM is  $X^0$  displacement, it appears that it cannot have the structure of a head chain that complies with the HMC. Consider the data in (1.1c), schematically repeated in (1.2).

(1.2)  $[V_3 - V_1 - V_2 - t_3]$

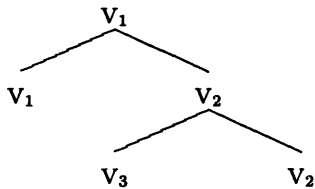
If the movement starts, as it does, from the base position of the lowest verb, and if only left adjunction is allowed,  $V_3$  should move to the next highest head  $V_2$ , and adjoin to it. In the next step, the complex  $[V_3 - V_2]$  should move one position higher and adjoin to the auxiliary ( $V_1$ ) (fig. 1.2). However, this gives rise to an incorrect, and in fact impossible, word order,  $[V_3 - V_2 - V_1]$ .

(Fig. 1.2)

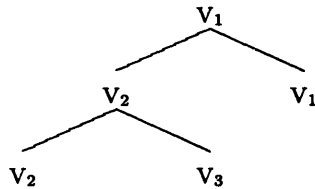


We can repeat the procedure varying the direction of adjunction, but still the output would not be the desired result. For instance if  $[V_2 V_3 - V_2]$  can right adjoin to  $V_1$ , we get  $[V_1 - V_3 - V_2]$  order as in (fig. 1.3a). If  $V_3$  can adjoin to  $V_2$  to the right and then  $[V_2 V_2 - V_3]$  either left or right adjoins to  $V_1$ , we get two patterns. In the first instance the result is  $[V_2 - V_3 - V_1]$  as in (fig. 1.3b), while in the second instance we get  $[V_1 - V_2 - V_3]$  as in (fig. 1.3c). Therefore, a derivation of data in (1.2) which conforms to the HMC seems unavailable.

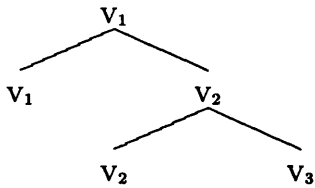
(Fig. 1.3a)



(Fig. 1.3b)

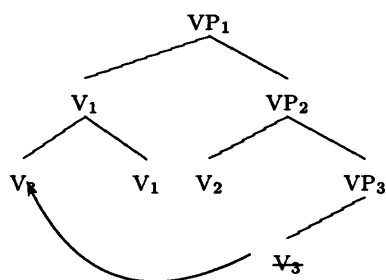


(Fig. 1.3c)

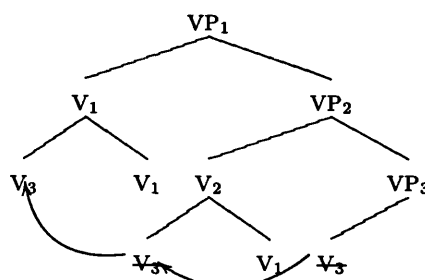


The pattern in (1.2) can be derived if the locality principles constraining head movement are relaxed. For instance, the correct word order arises if we abandon the HMC and admit as grammatical representations of the type given in (fig. 1.4a). Then,  $V_3$  moves non-locally, skipping at the very least the intermediate  $V_2$  position, giving rise to the structure in (fig. 1.4a). Yet another possibility would be to allow excorporation, by which a head  $X^0$  simply moves through the nearest c-commanding head position. This is to say that the head adjoins to the closest c-commanding head as required by the HMC, but subsequently moves out of the adjunction structure and raises to the next head up. In that case,  $V_3$  moves to  $V_2$ , first adjoins to it, and then excorporates to move up to the auxiliary. This is illustrated in (fig. 1.4b).

(Fig. 1.4a)



(Fig. 1.4b)



In this chapter I will outline the main characteristics of LVM. However, before we proceed, two remarks are in order. Firstly, both names under which the construction is known are not entirely suitable for several reasons. The term *Long head movement* implies at least two things which may well turn out to be incorrect, namely (i) that LVM is an instance of  $X^0$  movement, and (ii) that this movement violates the locality laws which prohibit any *long* fronting of heads. Moreover, the term *Long Verb Movement* is incorrect since it suggests that only verbs can be fronted by this process. As a matter of fact, apart from verbs in their infinitival (1.3a) and participial forms – past participles (1.1) and passive participles (1.3b) – the inventory of elements which can undergo LVM includes adjectival (1.3c) and nominal predicates (1.3d) as well.<sup>1</sup>

- (1.3) (a) *Napravit<sub>i</sub> ću t<sub>i</sub> kolača.*  
 make-inf shall cakes  
 'I will bake some cakes.'

- (b) *Napravljena<sub>i</sub> je t<sub>i</sub> u srednjem vijeku.*  
 built-pass is in middle ages.  
 'It was built in the Middle Ages.'

- (c) *Dragi mi je t<sub>i</sub>.*  
 dear me-dat is  
 'He is dear to me.'

<sup>1</sup> All examples throughout this work are from Serbo-Croat, unless indicated otherwise.

- (d) *Liječnica<sub>i</sub> je t<sub>i</sub>.*  
 doctor-3fsg is  
 ‘She is a doctor.’

The second point concerns the crosslinguistic distribution of LVM. It is found in a set of (sometimes) unrelated languages, among which are the languages from the Slavic, Romance and Celtic groups. Currently, we find it in Serbo-Croat, Bulgarian, Slovenian, Czech, Slovak, Breton and Romanian.<sup>2</sup> Macedonian, a language spoken in the Balkans and closely related to Bulgarian and Serbo-Croat, exhibits historical remnants of LVM, but does not have it as a productive synchronic process (Tomić 1996, 1997). Historically, LVM was found in older stages of all Romance language, apart from Old French and Old Italian, and additionally in Welsh where it was lost after the Early Modern period.

Crosslinguistically, LVM constructions show a number of robust properties, albeit some differences between the languages remain. This thesis is primarily concerned with Serbo-Croat (henceforth SC) and my discussion and proposed analysis is in principle restricted to this language. Where necessary, however, data from other languages will be introduced and discussed.

## 1.1 The pattern

The defining characteristic of LVM is the fact that the verbs of the clause do not preserve the relative order of their merger. Schematically, the possible patterns are represented below as (1.4a, b and c). (1.4a) illustrates the base generated order, (1.4b) is generated by local fronting of  $V_2$  across  $V_1$ , while (1.4c) is an instance of non-local application of LVM, displacing  $V_3$  across  $V_2$  and  $V_1$ . Note that (1.4a) corresponds to (1.1a), (1.4b) to (1.1b) and (1.4c) to (1.1c). The pattern in (1.4d) has not been

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<sup>2</sup>Albanian, Fiorentino and Northern Greek are sometimes added to this group (Rivero 1994). However, LVM in these languages involves the fronting of the verb ( $V^0$  or  $Aux^0$ ) over an agreement morpheme, in contrast to ‘standard’ LVM where the verb crosses over one, or more, auxiliaries.

illustrated previously. I give it here as (1.5).

(1.4) (a)  $[V_1 - V_2 - V_3] = (1.1a)$

(b)  $[V_2 - V_1 - V_3] = (1.1b)$

(c)  $[V_3 - V_1 - V_2] = (1.1c)$

(d)  $[V_1 - V_3 - V_2] = (1.5)$

(1.5) *Petar je svirao<sub>i</sub> bio t<sub>i</sub> čelo.*  
               V<sub>1</sub> V<sub>3</sub> V<sub>2</sub>  
 Peter-nom is played been cello-acc  
 ‘Peter had played the cello.’

The possibilities in (1.4a and b) are also found in the periphrastic tenses which are formed by combinations of two verbs. They can either preserve the underlying order (1.6a and 1.7a), or show up in the inverted order (1.6b and 1.7b) by the application of LVM. The patterns in two-verb combinations are clearly contained in the ordering patterns of three verbs and whatever holds for (1.4b) also holds for (1.6b).

(1.6) (a)  $[V_1 - V_2]$

(b)  $[V_2 - V_1]$

(1.7) (a) *Petar je svirao čelo.*  
               V<sub>1</sub> V<sub>2</sub>  
 Peter-nom is played cello-acc.  
 ‘Peter played the cello.’

(b) *Svirao<sub>i</sub> je t<sub>i</sub> čelo.*  
       V<sub>2</sub> V<sub>1</sub>  
 played is cello-acc  
 ‘He played the cello.’

Clearly, the options in (1.4) do not exhaust the whole set of logical possibilities. Further conceivable patterns are (1.8) and (1.10). (1.8) is not intended to stand for a base generated order (unlike 1.4a and 1.6a), but for those structures where



LVM has applied string-vacuously. Notice that such structures, in principle, can be distinguished from the base generated ones. The application of  $X^0$  movement should lead to the formation of a head cluster, with the concomitant adjacency between the verbal elements. This is not what obtains, however, as the grammatical (1.9) suggests. From these data we can conclude that string vacuous LVM either does not occur, or at least is not obligatory.

(1.8)  $[V_1 - V_2 - V_3]$

(1.9) *Petar je bio odlično svirao čelo.*  
Peter-nom is been excellently played cello-acc  
‘Peter had played the cello excellently.’

The ungrammatical possibilities in (1.10) are both characterised by the placement of two lower verbs to the position preceding the tensed auxiliary. LVM can front only one verbal element, either  $V_2$  or  $V_3$ , but never  $V_2$  and  $V_3$  together, in any order. The generalisation, then, is that if LVM applies,  $V_1$  has to be found in the second position relative to the order of other verbs.

(1.10) (a)  $*[V_3 - V_2 - V_1]$

(b)  $*[V_2 - V_3 - V_1]$

(1.11) (a) *\*Svirao bio je t<sub>i</sub> t<sub>j</sub> čelo.*  
 $V_3 \quad V_2 \quad V_1$   
played been is cello-acc  
‘He had played the cello.’

(b) *\*Bio svirao je t<sub>i</sub> t<sub>j</sub> čelo.*  
 $V_2 \quad V_3 \quad V_1$   
been played is cello-acc  
‘He had played the cello.’

The discussion above pertains to SC. Crosslinguistically, there is an important dichotomy in the possibilities attested in LVM languages. It concerns the grammaticality of (1.4c), where the lowest verb  $V_3$  is displaced over  $V_1$  and  $V_2$ . This pattern is

not available in a subset of LVM languages, namely Czech, Slovak, Old Spanish, Old Portuguese and some dialects of SC (namely the Croatian variants of the language as reported by Wilder and Čavar 1994). On the other hand, (1.4b) is universally available. As far as I know, the patterns ruled out in SC, are also impossible elsewhere. Therefore, the only relevant point of divergence is the possibility of  $V_3$  fronting.

| $[V_3 - V_1 - V_2]$ | $*[V_3 - V_1 - V_2]$      |
|---------------------|---------------------------|
| Serbo-Croat         | some dialects of Croatian |
| Bulgarian           | Czech                     |
| Slovenian           | Old Spanish               |
| Rumanian            | 19th century Portuguese   |
| Breton              | Slovak                    |
| Macedonian          |                           |

## 1.2 Three classes of auxiliaries

LVM cannot apply in all constructions. The possibility of predicate fronting is determined by the type of  $V_1$ . One class of verbs, under certain well defined conditions, requires obligatory LVM. Another class permits it, but does not make it a mandatory process, while yet a different group of verbs disallows it completely. I will term these Type 1, Type 2 and Type 3 auxiliaries respectively.

The main characteristic of Type 1 auxiliaries is that they are prohibited from appearing in sentence initial position. In SC they are enclitics, their sentence initial placement failing due to the necessity of phonological attachment to the host which is placed to their left. Moreover, SC Type 1 auxiliaries are further constrained: they must obligatorily appear in the second position of the clause. Effectively, this means that there must be some constituent X, such that X is clause initial and precedes the clitic. In (1.12) it is the presence of a pre-clitic constituent that determines the grammaticality of the structure.

- (1.12) (a) *\*Je gledao film.*  
is-cl watched film-acc  
‘He watched a film.’
- (b) *[Petar]<sub>x</sub> je pažljivo gledao film.*  
Peter-nom is-cl carefully watched film-acc  
‘Peter watched the film carefully.’

LVM does not apply in all structures (viz. the preverbal placement of the adverb in 1.12b). However, given that clause initial clitic placement fails, LVM-type verb fronting in the presence of Type 1 auxiliaries is said to be obligatory. In other words, this statement is meant to apply to those structures in which there is no other constituent before the clitic auxiliary already.

Type 2 auxiliaries are non-clitic. They are possible in initial position. They freely allow LVM of the verb, but there is no sense in which they necessitate it. Movement over this group of verbs is licensed not by grammatical but by discourse conditions (see section 1.9).

- (1.13) (a) *Bješe otišao na koncert.*  
was-3sg gone on concert  
‘He had gone to the concert.’
- (b) *Otišao<sub>i</sub> bješe t<sub>i</sub> na koncert.*  
gone was-3sg on concert

Type 3 auxiliaries are generally considered not to allow LVM. In SC they are negative and emphatic auxiliaries. These are morphologically complex items, corresponding to a morpheme *M* plus the clitic auxiliary (i.e. Type 1 verb). In the case of negative auxiliaries, *M* is negative *ne*. Emphatic auxiliaries are actually corresponding full forms of their clitic counterparts (see tables 2.1, 2.2 and 2.3 in chapter 2, section 2.1, 2.2 and 2.3), characterised by the presence of the stem morpheme *je*. Both these types of elements are far less restricted in their distribution than Type 1 verbs. They may stand clause initially (1.14a) and (1.15a) or in some lower position as in (1.14b) and (1.15b).

- (1.14) (a) *Nismo otišli u kino.*  
 NEG-is-cl gone to cinema  
 ‘We haven’t gone to the cinema.’
- (b) [<sub>VP</sub> *Otišli u kino*]<sub>i</sub> *nismo t<sub>i</sub>.*  
 gone to cinema NEG-is-cl  
 ‘We haven’t gone to the cinema.’
- (1.15) (a) *Jesmo otišli u kino.*  
 Je-is-cl gone to cinema  
 ‘We have gone to the cinema.’
- (b) [<sub>VP</sub> *Otišli u kino*]<sub>i</sub> *jesmo t<sub>i</sub>.*  
 gone to cinema JE-is-cl  
 ‘We have gone to the cinema.’

Such placement possibilities show that Type 3 auxiliaries are not clitics, and that they do not inherit any positional requirements from their clitic constituent morphemes. In the presence of Type 3 auxiliaries, LVM is not possible (1.16a) and (1.16b).<sup>3</sup>

- (1.16) (a) \**Otišli<sub>i</sub> nismo t<sub>i</sub> u kino.*  
 gone NEG-is-cl to cinema  
 ‘We have not gone to the cinema.’
- (b) \**Otišli<sub>i</sub> jesmo t<sub>i</sub> u kino.*  
 gone JE-is-cl to cinema  
 ‘We HAVE gone to the cinema.’

The tripartite division of auxiliaries repeats itself in other LVM languages. Crosslinguistically, Type 1 verbs are mostly enclitic elements, with the exception of Breton. Clitic auxiliaries may be second position clitics (Slovenian, Slovak, Czech) or preverbal clitics (Bulgarian). Breton auxiliaries (in general all tensed verbs) are constrained by a Verb Second (V2) requirement. Crucially, in one way or another, either due to the clitic status of the Type 1 auxiliary, or due to the V2 constraint, the initial placement of these elements fails, as illustrated by the minimal pairs below, (1.17) for Czech, and (1.18) for Bulgarian.

<sup>3</sup>Such patterns are actually marginally acceptable under certain discourse conditions with the contrastive focus on the fronted verb.

(1.17) (a) *Dárek jsem ti přinesl.* CZECH  
 present-acc am brought  
 ‘I brought you a present.’

(b) \**Jsem ti přinesl dárek.*  
 am to-you-cl brought present-acc

(1.18) (a) *Petur e čel knigata.* BULGARIAN  
 read is-cl book-def  
 ‘He has read the book.’

(b) \**E čel knigata.*  
 is-cl read book-def

Therefore, a significant descriptive generalisation related to LVM over Type 1 auxiliaries can be formulated. It relates it to the prohibition on sentence initial placement of the triggering auxiliary (for clitics this is also known as the Tobler–Moussafia Law). We can state that there is a one way implication such that languages with verbal elements which cannot stand in sentence initial position have LVM.

### 1.3 Clause boundedness of LVM

LVM is a strictly local process which cannot escape the domain of the triggering auxiliary. It follows that the verb cannot move out of the finite clause it starts out from. Hence the ungrammaticality of (1.19b).

(1.19) (a) *Ja sam mislila da je otišao na koncert.*  
 I am-cl thought that is-cl gone on concert  
 ‘I thought that he has gone to the concert.’

(b) \**Otišao<sub>i</sub> sam mislila da je t<sub>i</sub> na koncert.*  
 gone am-cl thought that is-cl on concert  
 ‘I thought that he had gone to the concert.’

A different matter is that the verb cannot move out of its own domain even in restructuring contexts. In SC restructuring predicates (typically modals and semi-modals) take either infinitival complements or *that*-clause complements. This depends

on dialectal preferences, the former being typical for Western varieties of the language (i.e. Croatian) and the latter for Eastern ones (i.e. Serbian). Note that the verb of the *that*-clause does not show up with infinitival morphology, but in present tense forms. LVM is impossible both out of a *that*-clause or infinitival complements.

- (1.20) (a) *On je morao otići na koncert.*  
 he-nom is-cl must-part go-inf on concert.  
 ‘He had to go to the concert.’
- (a’) *\*Otići<sub>i</sub> je morao t<sub>i</sub> na koncert.*  
 go-inf is-cl must-part on concert
- (b) *On je morao da ode na koncert.*  
 he-nom is-cl must-part that goes on concert  
 ‘He had to go to the concert.’
- (b’) *\*Ode<sub>i</sub> je morao da t<sub>i</sub> na koncert.*  
 goes is-cl must-part that on concert.

Note that while the fronting by LVM of the complement verb of the restructuring verb is impossible, the restructuring verb itself can be displaced to the clause initial position across the auxiliary.

- (1.21) (a) *Morao<sub>i</sub> je t<sub>i</sub> otići na koncert.*  
 must-part is-cl go-inf on concert  
 ‘He had to go to the concert.’
- (b) *Morao<sub>i</sub> je t<sub>i</sub> da ode na koncert.*  
 must-part is-cl that goes on concert

## 1.4 Adjacency requirement

The application of LVM leads to a configuration in which the fronted participle and the auxiliary have to be immediately adjacent. The intervention of any element whatsoever, apart from clitic elements, leads to ungrammaticality.

(1.22) (a) \**Slušao<sub>i</sub> Petar je t<sub>i</sub> hor.*  
 listened Peter-nom is-cl choir-acc  
 ‘Peter has listened to the choir.’

(b) \**Slušao<sub>i</sub> dugo je t<sub>i</sub> hor.*  
 listened long-time is-cl choir-acc  
 ‘He listened to the choir for a long time.’

The same condition does not apply to LVM over Type 2 auxiliaries. Here, sentential constituents may intervene between the LVM-fronted verb and the auxiliary as in (1.23).

(1.23) *Vidjeo<sub>i</sub> Ivan bješe t<sub>i</sub> Petra.*  
 seen Ivan-nom was-3sg Peter-acc  
 ‘Ivan had seen Peter.’

Notice that the difference between (1.22) and (1.23) can be easily ascribed to a violation of the second position constraint on clitic placement. The intervention of the subject *Peter* in (1.22a) and adverb *dugo* in (1.22b) gives rise to a clause with the clitic in the third position. Such structures are, as a rule, judged ungrammatical. Consider (1.24) where the clitic is pushed rightward due to the presence of the subject and the adverb in the pre-clitic position. This, too, leads to ungrammaticality.

(1.24) \**Ivan brzo je vozio auto.*  
 Ivan-nom quickly is-cl driven car-acc  
 ‘Ivan drove the car quickly.’

Therefore, LVM over Type 2, non-clitic, auxiliaries does not necessarily lead to adjacency between the fronted participle and the auxiliary. The apparent adjacency effect in the context of Type 1 auxiliaries can therefore be put down to an independent requirement related to clitic placement.

## 1.5 LVM in embedded and matrix clauses

In SC LVM over Type 1 auxiliaries is restricted in that it can only occur in matrix clauses. Embedded LVM is impossible (1.25).

- (1.25) \**Ne vjerujem da slušao<sub>i</sub> je t<sub>i</sub> Gergijeva.*  
 not believe-1sg.pres that listened is-cl Gergiev-acc  
 ‘I do not believe that he listened to Gergiev.’

Notice that SC second position clitics in embedded clauses attach to the complementizer, from which they cannot be separated by any material (1.26). (1.27) shows the parallel failure of embedded topicalisation of the object DP.

- (1.26) ...*da je slušao Gergijeva.*  
 ...that is-cl listened Gergiev  
 ‘...that he listened to Gergiev.’

- (1.27) \*...*da Gergijeva<sub>i</sub> je slušao t<sub>i</sub>.*  
 ...that Gergiev is-cl listened  
 ‘...that he listened to Gergiev.’

Embedded LVM over Type 2 auxiliaries is possible (1.28). These verbs, unlike clitics, do not attach to the complementizer. This suggests that the differing properties of LVM in the contexts of Type 1 and Type 2 auxiliaries may be ascribed again to the differences between the clitic and non-clitic auxiliaries.

- (1.28) *Ne vjerujem da slušao<sub>i</sub> bješe t<sub>i</sub> Gergijeva.*  
 not believe-1sg.pres that listened was-3sg Gergiev-acc  
 ‘I do not believe that he had listened to Gergiev.’

## 1.6 Clause-initial placement

LVM over Type 1 auxiliaries leads to the participle being placed in initial position. With LVM over Type 2 auxiliaries this is not necessarily so (we already saw an instance



of this in the previous section: the participle may end up after the complementizer in an embedded clause in this case.) As noted, the initial placement facts can be related to the second position requirement constraining the clitics, which is irrelevant for the syntax of non-clitic auxiliaries. The examples in (1.29) illustrate that both kinds of auxiliaries allow sentence initial placement of the LVM-moved verb. The (a) example involves the clitic auxiliary *je*, while in the (b) example the relevant element is the past tense form of *biti* ('to be'). The pair in (1.30) brings out the difference between them. Non-initial placement is ruled out in the context of the clitic auxiliary, while grammatical in the context of the non-clitic one.

- (1.29) (a) *Vozio<sub>i</sub> je t<sub>i</sub> biciklo.*  
           driven is-cl bicycle-acc  
           'He rode a bicycle.'
- (b) *Vozio<sub>i</sub> bješe t<sub>i</sub> biciklo.*  
           driven was-3sg bicycle-acc  
           'He had ridden a bicycle.'
- (1.30) (a) *\*Vozio<sub>i</sub> Petrovo je t<sub>i</sub> biciklo.*  
           driven Peter's is-cl bicycle-acc  
           'He rode Peter's bicycle.'
- (a) *Petrovo vozio<sub>i</sub> bješe t<sub>i</sub> biciklo.*  
           Peter's driven was-3sg bicycle-acc  
           'He rode Peter's bicycle.'

## 1.7 Blocking effects

LVM cannot take place in the presence of a certain set of elements. In SC these include subjects, sentential adverbs, the question particle *li* and negation. The set of blocking elements is not the same crosslinguistically. As far as I know, only subjects universally block LVM. For some languages the data concerning sentential adverbs are not available, the question particle is not always a part of the lexical inventory, and even in some of those languages that have it, it may not have a blocking effect,

as in Bulgarian. The blocking effect of negation is evidenced only in a subset of LVM languages.

The factor uniting this seemingly disparate set is the fact that all the blocking elements are either directly merged in, or raised to, a high position, more precisely, a position above the auxiliary. Notice that while this statement is correct as such, it needs to be made more precise. For instance, clitic auxiliaries may surface in the position preceding the sentential adverb, or in the position following it (1.31a) and (1.31b). The issue of variable clitic placement will be discussed in chapter 2 in more detail. Let us say for the moment, given the possibility in (1.31b), that sentential adverbs are merged in a position above the clitic auxiliary.

- (1.31) (a) *Petar je vjerovatno prodao kuću.*  
           Peter-nom is-cl probably sold house-acc  
           ‘Peter has probably sold the house.’
- (b) *Vjerovatno je prodao kuću.*  
           probably is-cl sold house-acc  
           ‘He has probably sold the house.’

### 1.7.1 Subjects

SC is an SVO language. Subjects cannot ordinarily intervene between the auxiliary and the source position of an LVM-moved participle. Hence the ungrammaticality of (1.32). However, if the subject is focused, then LVM over it becomes possible (1.33).

- (1.32) *\*Otišao<sub>i</sub> je Petar t<sub>i</sub> na koncert.*  
           gone is-cl Peter-nom on concert  
           ‘Peter went to the concert.’
- (1.33) (a) *Otišao<sub>i</sub> je PETAR t<sub>i</sub> na koncert.*  
           gone is-cl PETER on concert  
           ‘PETER went to the concert.’
- (b) *Otišao<sub>i</sub> je t<sub>i</sub> na koncert PETAR.*  
           gone is-cl on concert PETER

It is known that focused constituents can be in different structural positions their non-focused counterparts find themselves in. In (1.32) the subject has presumably moved to Spec-IP. It is possible that the subject DP in (1.33a) and (1.33b) has not raised to its canonical position, and that in such structures subjects stay within the VP (cf. discussion in chapter 4, section 3.2).

### 1.7.2 Sentential adverbs

Sentential adverbs cannot be present in LVM constructions. This observation is primarily due to Bošković (1995).<sup>4</sup> Consider (1.31a) above. If the subject is dropped, the participle could raise over the adverb and the auxiliary, and land in sentence initial position (with a well formed output at least as far as the second position constraint on clitics is concerned). Such a structure, however, is ungrammatical (1.34).

- (1.34) \**Prodao<sub>i</sub> je vjerovatno t<sub>i</sub> kuću.*  
 sold is-cl probably house-acc  
 ‘He probably sold the house.’

The impossibility of LVM over sentential adverbs covers only those cases where adverbs are integrated into the sentence structure and where they carry sentential scope. Parenthetical adverbs, offset by the required parenthetical intonation, can be present without giving rise to any intervention effects (1.35a). Moreover, adverbs can also be present in case they have narrow scope, as in (1.35b), where the modal adverb *probably* scopes over the object only, giving rise to the reading that roughly translates as *Peter might have sold a set of X; it was probably a y (y = house) of X that he sold*

- (1.35) (a) *Prodao<sub>i</sub> je # vjerovatno # t<sub>i</sub> kuću.*  
 sold is-cl probably house-acc  
 ‘He probably sold the house.’

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<sup>4</sup>Caink (1998) considers Bulgarian data where LVM across sentential adverbs is also blocked. Joutiteau (2003) makes a similar claim for Breton LVM.

- (b) *Prodao<sub>i</sub> je vjerovatno t<sub>i</sub> kuću.*  
 sold is-cl probably house-acc  
 ‘It was probably the house that he sold.’

Unlike sentential adverbs, VP adverbs can be present in LVM constructions without interfering with the fronting of the non-finite verb. Consider examples with adverbs that are ambiguous between sentential and manner readings, like the adverb *mudro* (‘wisely’). In sentences with underlying word order (1.36a), the adverb can be interpreted as either a VP modifier or as a sentence modifier: the example can mean both ‘It was wise of Peter to sell his house’ or ‘Peter sold his house in a wise manner’. The adverb is interpreted as a sentence modifier, or VP modifier respectively. However, after the application of LVM, only the latter reading is possible, as illustrated by (1.36b).

- (1.36) (a) *Petar je mudro prodao kuću.*  
 Peter-nom is-cl wisely sold house-acc  
 ‘It was wise of Peter to sell the house, or  
 Peter sold the house wisely.’  
 (b) *Prodao<sub>i</sub> je mudro t<sub>i</sub> kuću.*  
 sold is-cl wisely house-acc  
 ‘He sold the house wisely.’

### 1.7.3 The clitic *li*

In its lexical inventory, SC has an item *li*, which functions either as a question particle, or as a focus particle. *Li* is a clitic, subject to the second position constraint, albeit with additional and distinctive phonological requirements. It can be preceded only by an element which is not unambiguously a phrase, i.e. an element which contains a single phonological word. Consider the following contrast which pertains to both question *li* and to its interpretation as the focusing particle.

- (1.37) (a) *Koje li je knjige čitao?* QUESTION  
 which LI is-cl books-acc read  
 ‘Which books has he read?’

- (b) \**Koje knjige li je čitao.*  
 which books-acc LI is-cl read  
 ‘Which books has he read?’

- (1.38) (a) *Knjige li je moje čitao!* FOCUS  
 books-acc LI is-cl my-acc read  
 ‘My BOOKS he read.’

- (b) \**Moje knjige li je čitao!*  
 my books-acc LI is-cl read  
 ‘MY BOOKS he read.’

In question formation, finite verbs can be fronted over *li* (1.39a). Participles, on the other hand, cannot move over this element. In declarative sentences in which the participle gets focused, LVM is possible. (1.39b) is ungrammatical under the question interpretation. (1.40b), where the participle is focused, is well formed.

- (1.39) (a) *Čita<sub>i</sub> li t<sub>i</sub> moje knjige?* QUESTION  
 read-3sg.pres LI my books-acc  
 ‘Is he reading my books?’

- (b) \**Čitao<sub>i</sub> li je t<sub>i</sub> moje knjige?* QUESTION  
 read LI is-cl my books-acc  
 ‘Has he read my books?’

- (1.40) (a) *Čita<sub>i</sub> li t<sub>i</sub> moje knjige!* FOCUS  
 read-3sg.pres LI my books-acc  
 ‘He READS my books.’

- (b) *Čitao<sub>i</sub> li je t<sub>i</sub> moje knjige!* FOCUS  
 read LI is-cl my books-acc  
 ‘He has READ my books.’

#### 1.7.4 Negation

Recall that in the context of negative auxiliaries and emphatic forms LVM is impossible. I have termed this group Type 3 auxiliaries, their hallmark being the blocking effect on LVM-type displacement of the non-finite verb. The relevant examples are repeated here as (1.41a) and (1.41b).

(1.41) (a) \**Otišli<sub>i</sub> nismo t<sub>i</sub> u kino.*  
gone NEG-is-cl to cinema  
‘We have not gone to the cinema.’

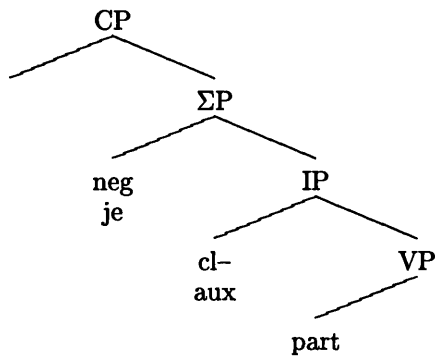
(b) \**Otišli<sub>i</sub> jesmo t<sub>i</sub> u kino.*  
gone JE-is-cl to cinema  
‘We HAVE gone to the cinema.’

Recall, furthermore, that negative and emphatic forms are morphologically complex, consisting of two morphemes: (i) the second position clitic auxiliary and (ii) the negative morpheme *ne* and the stem *je* respectively. Under a decompositional approach, the morphemes *ne* or *je* and the clitic auxiliary are merged in their own separate projections, the composite Type 3 auxiliary being derived from the combination of the two.<sup>5</sup> Simplifying somewhat, the underlying structure of a SC negative clause, or a clause with emphatic affirmation, would be as in (fig. 1.5). The two morphemes occupy the position identified by Laka (1990) as  $\Sigma$ , in SC typically assumed to be projected above the position of the clitic auxiliary (see Bošković 1995, 1997a, 2001, Progovac 1994, 1996, Rivero 1991, 2001, etc.) The derivation of Type 3 auxiliaries may, then, involve syntactic movement of the clitic auxiliary to the head of  $\Sigma$ , or some morphophonological process operating postsyntactically.

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<sup>5</sup>The decompositional approach is far from uncontroversial. See Caink (1998) for arguments against it.

(Fig. 1.5)

**position of  $\Sigma P$  in SC**

Given the assumed representation in (fig. 1.5), negation, as well as the emphatic *je*, can be understood as elements which pattern with other LVM blocking elements, in that they are merged high in the structure and occupy an independent syntactic position.

## 1.8 LVM and VP fronting

The auxiliaries which licence LVM (Type 1 and Type 2 auxiliaries) are incompatible with VP fronting. They neither allow the preposing of the full VP (i.e. the verb and all of its complements) (1.42a), nor of an incomplete VP consisting of the verb plus some (but not all) of its dependents (1.42b). The fronting of the non-finite verb in the context of these auxiliaries can only involve movement of the verbal head alone. Notice that while this statement holds true for most variants of SC, Wilder and Ćavar (1994) report that some native speakers of the Croatian variants of the language find (1.42) marginally acceptable.

- (1.42) (a)  $*(??)/_{VP}$  *Pio pivo*<sub>i</sub> *je* *t<sub>i</sub>*.  
drunk beer-acc is-cl  
‘He has drunk beer.’
- (b)  $*(??)$  *Poklonio Petru* *je ploču*.  
given Peter-dat is-cl record-acc  
‘He has made a gift of a record to Peter.’

On the other hand, Type 3 auxiliaries over which LVM is impossible, allow VP fronting (1.42). Therefore, LVM and VP fronting are in complementary distribution.

- (1.43)  $/_{VP}$  *Popio pivo*<sub>i</sub> *nije* *t<sub>i</sub>*.  
drunk beer-acc NEG-is-cl  
‘He has not drunk up the beer.’

Note that unlike LVM, which is strictly clause-bound, VP topicalisation can go long distance across clausal boundaries as in (1.44).

- (1.44)  $?/_{VP}$  *Kupiti kuću*<sub>i</sub> *namjeravao je u Parizu* *t<sub>i</sub>*.  
buy-inf house-acc intended is-cl in Paris  
‘He intended to buy a house in Paris.’

### 1.8.1 Incomplete VP topicalisation

LVM, at least superficially, resembles some instances of incomplete (or remnant) VP topicalisation as found in Germanic. Here, too, the non-finite verb is optionally moved across the finite auxiliary, so that a linear string is identical to outputs of LVM.

- (1.45) (a)  $/_{VP}$  *t<sub>i</sub> Gelesen*<sub>j</sub> *hat das Buch*<sub>i</sub> *keiner* *t<sub>j</sub>*. GERMAN  
read has the book no-one  
‘No one has read the book.’ Müller (2001)
- (b)  $/_{VP}$  *das Buch gelesen* *hat keiner* *t<sub>j</sub>*.  
the book read has no-one

However, Germanic fronted remnants can be more complex, and contain more material than just the head of the VP, as illustrated in (1.8.1b). This possibility



is, as we have seen, unavailable in LVM constructions. Furthermore, incomplete VP movement in Germanic differs from LVM in (i) being able to form long distance chains (1.46) and (ii) the absence of blocking effects of the type found with LVM, such as those induced by negation (1.47).<sup>6</sup>

- (1.46) *Gezien heeft Piet ontkend dat hij Jan heeft.* DUTCH  
seen has Piet denied that he Jan has  
'Piet has denied that he has SEEN John.'

- (1.47) *Gelezen heeft hij Dickens niet.*  
read has he Dickens not  
'He hasn't actually READ Dickens.'

The Germanic data are arguably derived by XP fronting, and hence the fact that the participle crosses the auxiliary does not involve a locality violation.  $X^0$ s, by Relativised Minimality, do not intervene on the path of XP movement. Because of this, the possibility that LVM may be an instance of XP fronting as well is clearly appealing. However, the differences between the two constructions are often taken as arguments against a potential XP analysis, and, therefore, as indirect motivation for the  $X^0$  view of LVM (see for instance Rivero 1991, Roberts, forth, etc).

### 1.9 The discourse properties of LVM sentences

LVM sentences are associated with specific discourse-informational properties. The effects that arise out of different subtypes of LVM are different.  $[V_2 - V_1]$  type of fronting over Type 1 auxiliaries is associated with utterances which are topicless (or 'thetic' in the terminology of the Prague school), and typically appropriate in narrative continuation, with subjects of semantic predication given by the discourse.<sup>7</sup>

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<sup>6</sup>The examples were provided by Peter Ackema, p.c.

<sup>7</sup>For an extensive discussion of informational properties of  $[V_2 - V_1]$  LVM in Breton see Schafer (1997).

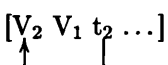
On the other hand,  $[V_3-V_1-V_2]$  patterns involving clitic auxiliaries (1.48a), and LVM over Type 2 auxiliaries in general (1.48b), give rise to a particular focusing effect such that the fronted verb ( $V_3$ ) has narrow focus. The fronted participle is associated with prosodic prominence, and is interpreted either as an emphasis, or contrastive focus.

- (1.48) (a) *VIDJELA<sub>i</sub> ga je bila t<sub>i</sub>.*  
 SEEN him-cl.acc is-cl been  
 ‘She has SEEN him.’
- (b) *Ako ga VIDJELA<sub>i</sub> budeš t<sub>i</sub>, javi mi.*  
 if him-cl.acc SEEN would , call me  
 ‘If you happen to SEE him, call me.’

## 1.10 Local and non-local LVM

It is not clear whether all the data presented here so far as LVM constructions should be regarded as outputs of one and the same process. The opinions in the literature are divided. Bošković (1995, 2001) gives them a uniform analysis, Throughout her work Rivero (e.g. 1991, 2000) distinguishes between LVM over Type 1 and Type 2 auxiliaries, so that she regards only participle fronting over clitics as LVM. Embick and Izvorski (1994, 1997) (see also Phillips 1996) argue for a distinction between LVM over clitic auxiliaries involving the fronting of the intermediate verb (i.e.  $V_2$ ) on one hand, and LVM of  $V_3$  over  $V_2$  and  $V_1$ , together with LVM over Type 2 auxiliaries on the other. I believe that the last mentioned distinction is on the right track. I will adopt it and modify it somewhat. I shall recognise two types of LVM: local and non-local LVM.

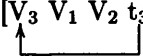
Local LVM is the movement of the nearest verb over the clitic auxiliary, giving rise to configurations which can be schematically represented like (1.49) below:

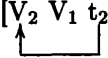
- (1.49)  $[V_2 V_1 t_2 \dots]$
- 

where  $V_1$  is a clitic auxiliary

$V_1$  in these structures can only belong to the set of clitic auxiliaries.

Non-local LVM is the fronting of the lowest verb across the  $[V_2 - V_1]$  sequence, as well as LVM over non-clitic auxiliaries.

$$(1.50) \quad [V_3 \ V_1 \ V_2 \ t_3 \ \dots]$$


$$(1.51) \quad [V_2 \ V_1 \ t_2 \ \dots]$$


$V_1$  is a non-clitic auxiliary

There are several reasons for considering non-local fronting over clitic auxiliaries and the fronting over non-clitic auxiliaries as one and the same process, distinct from local fronting across a clitic auxiliary. Firstly, the two are interdependent, in the sense that it is not possible for a language to have one without having the other. Recall that not all LVM languages allow non-local LVM (section 1 of this chapter), but that local LVM is present in each one of them. It happens that only those languages that allow non-local fronting also allow the optional fronting of the predicate over non-clitic auxiliaries.<sup>8</sup> This may be taken to indicate that the same process that leads to (1.50) also leads to (1.51). Moreover, this might also indicate that local LVM structures may involve a different kind of derivation, so that the two types of LVM are really two distinct syntactic processes.

Secondly, both types of non-local fronting give rise to narrow focus on the fronted participle. Local LVM is quite unlike them in this respect. It indicates broad sentential focus and topicless sentences. Last, and perhaps most importantly, the locality properties of what I call non-local fronting are such that they indicate, under the

---

<sup>8</sup>It is important to bear in mind that the clitic/non-clitic distinction does not quite correspond to my classification of auxiliaries into Type1/Type2. The reason is that, crosslinguistically, not all Type 1 elements are clitics. As mentioned, Breton is an exception to this generalisation. In this language finite verbs, be they functional or lexical, are strong (non-clitic) elements.

## 1. Introduction

|                          | V <sub>3</sub> -V <sub>1</sub> -V <sub>2</sub> | LVM OVER NON-CLITIC AUX |
|--------------------------|------------------------------------------------|-------------------------|
| Serbo-Croat              | ✓                                              | ✓                       |
| Bulgarian                | ✓                                              | ✓                       |
| Romanian                 | ✓                                              | ✓                       |
| Slovenian                | ✓                                              | ✓                       |
| Czech                    | *                                              | *                       |
| Slovak                   | *                                              | *                       |
| Old Spanish              | *                                              | *                       |
| 19th cent. Portuguese    | *                                              | *                       |
| Croatian (some dialects) | *                                              | *                       |

Table 1.1: The distribution of non-local LVM

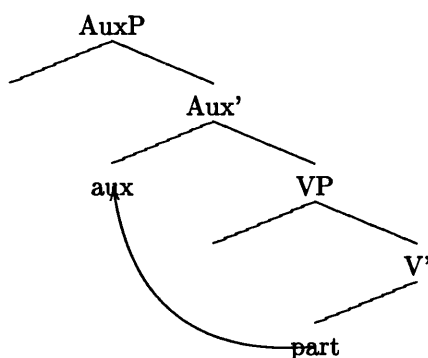
strongest version of the HMC, that they cannot be derived by head to head adjunction.

Consider the structure of local LVM as illustrated by (1.52):

- (1.52) *Svirao je čelo.*  
 played is-cl cello-acc  
 ‘He played the cello.’

Without anything further said, (1.52) looks like an ordinary head adjunction structure which may be derived by local application of head movement. The participle is attracted by and, moves up to, the next c-commanding head. On this view, locality is not violated under anyone’s conception of it (fig. 1.6).

(Fig. 1.6)



As we have seen at the very beginning, the same does not hold for non-local LVM.  $V_3$  has to move at least over the intermediate head position occupied by  $V_2$  (fig. 1.7a).<sup>9</sup> If non-local LVM over clitic auxiliaries patterns with participle fronting over non-clitic auxiliaries, then we would expect that there is some evidence that locality can be violated in the context of the latter type of auxiliaries as well. This is indeed the case. Recall the data in (1.23), from section 4 of this chapter, repeated here as (1.53).

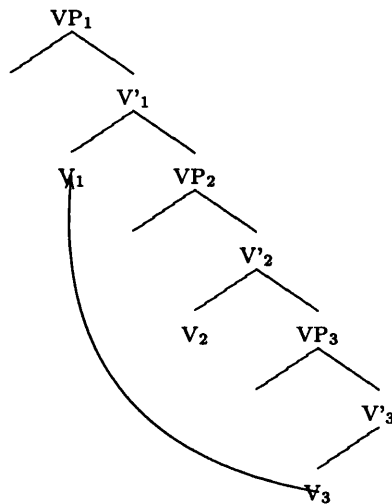
- (1.53) *Vidjeo<sub>i</sub> Ivan bješe t<sub>i</sub> Petra.*  
 seen Ivan-nom was-3sg Peter-acc  
 ‘Ivan had seen Peter.’

The data show that the adjacency requirement is absent when the predicate is LVM-moved over a non-clitic auxiliary. In particular, in (1.53), the sentential subject intervenes between the two, suggesting that the landing site of the fronted participle is higher than the canonical subject position (itself presumably the specifier of AgrSP). If this kind of LVM involved the formation of local  $X^0$  chains, the resulting head

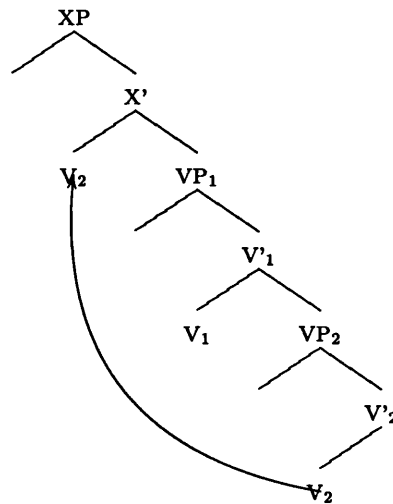
<sup>9</sup>This is a preliminary representation of non-local LVM over  $[V_1-V_2]$  sequence. In chapter 5, I will argue that both cases of non-local fronting should be seen as landing in the same structural position.

adjunction structure would give rise to the strict adjacency between the two, and such positioning of the sentential subject as in (1.53) would be ruled out, contrary to the facts. Therefore, there seems to be at least one piece of evidence to support the contention that LVM over non-clitic auxiliaries involves violation of the locality principles of  $X^0$  movement, and that the moving  $V_2$  skips a head position (fig. 1.7b).

(Fig. 1.7a)

LVM over  $V_1$ – $V_2$ 

(Fig. 1.7b)



LVM over non-clitic aux

## 1.11 LVM and pronominal clitics

The representations of LVM structures we have been working with so far are, in fact, somewhat simplified. A more complete view necessitates the consideration of other special clitics in the sense of Zwicky (1977). In SC, apart from auxiliaries and the question/focus particle *li* which we have encountered in the previous sections of this

chapter, the set of special clitics includes pronominal elements. Distinct clitic forms of personal pronouns are found in dative, accusative and genitive case. Example (1.54) provides some sample sentences containing pronominal clitics.

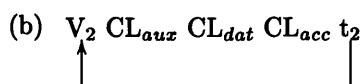
- (1.54) (a) *Svaki dan ga svira.*  
every day it-cl.acc plays  
‘He plays it every day.’
- (b) *Dat ću mu ga u Sarajevu.*  
give-inf will-cl him-cl.dat it-cl.acc in Sarajevo  
‘I will give it to him in Sarajevo.’
- (c) *Predstavili smo im se.*  
introduced are-cl them-cl.dat refl-cl.acc  
‘We have introduced ourselves to them.’

All clitics are subject to the second position requirement. They cluster together in a sequence which is rigidly ordered as given in (1.55), and which cannot be broken up by any intervening material.

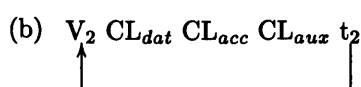
- (1.55) li – aux – dat – acc – gen – reflexive – je

Notice that the clitic cluster shows a split in the positioning of verbal clitics. All forms, apart from the third person singular clitic *je*, are placed immediately after the question/focus particle and precede pronominal elements. *Je* itself is positioned at the end of the cluster, following pronominal clitics. Due to this split, we can observe two distinct patterns created by LVM. On one hand, when the participle fronts over clitic auxiliaries other than *je*, it lands in the position immediately preceding them (1.56). On the other hand, if the auxiliary in question is *je*, then there is a series of elements intervening between the fronted verb and the auxiliary (1.57).

- (1.56) (a) *Dao si mu ga*  
given him-cl.dat it-cl.acc are-cl  
‘You have given it to him.’



- (1.57) (a) *Dao mu ga je.*  
given him-cl.dat it-cl.acc is-cl  
‘He has given it to him.’



Let us pause for a moment to consider the significance of the data in (1.57). The fact that the participle does not become adjacent to the third person singular clitic auxiliary by the application of LVM can be taken to suggest that LVM-type fronting is not an instance of morphologically selected movement (see Roberts 1994 among others). If LVM was triggered by affixation of the auxiliary onto the verb, then pronominal clitics should not be able to intervene between what would effectively be a stem and its affix.

Pronominal clitics pose additional questions such as those concerning their syntactic placement, their X'-theoretic status, the organisation of the cluster they form with clitic auxiliaries, etc. Some of these issues will be addressed in the course of discussion in the following chapter. For the moment, let us note that the X'-theoretic status of pronominal clitics is unclear and still a matter of considerable debate. In Slavic, it has variously been argued that pronominal clitics are XPs, X<sup>0</sup>s, or (exploiting the Bare Phrase Structure theoretic machinery (Chomsky 1994, Speas 1990)) that they are ambiguous between the two.

In fact, there are good reasons to regard them as XPs. It is reasonable to argue that pronominal clitics (at least in languages without clitic doubling, and SC is one such language) are phrasal elements.<sup>10</sup> They are interpreted as verbal arguments,

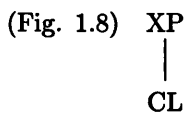
<sup>10</sup> For more discussion on the X'-theoretic status of pronominal auxiliaries see Halpern and Fontana (1994), who argue that second position pronominal clitics are XPs, while preverbal ones are X<sup>0</sup>s. See also Franks 1998, Franks and King 2000, Bošković 2001, for a range of different views.



## 1. Introduction

which may indicate that they are phrasal. On the other hand, they cluster with elements of indisputable  $X^0$  status, such as clitic auxiliaries. On the assumption that clustering is a morphological operation, and that morphology cannot tolerate  $X^0$  – XP complexes, it follows that they have to be heads.

A compromise view by which pronominal clitics are ambiguous between head and phrasal status is often advocated (see the references in footnote 10). Bare Phrase structure theoretic machinery gives such an option, for those items that do not project further, and that also fail to branch. Then, the clitics can be introduced into argument positions as XPs, but also incorporated into morphological structure as  $X^0$ s.<sup>11</sup>



Note that pronominal clitics are involved in structures similar to LVM. They seem to trigger the fronting of the finite verb (1.58a), apparently under conditions similar to those that cause LVM-type displacement. This is not surprising, given that, much like auxiliary clitics, they are constrained to appear in the second position of the clause. Sentence initial positioning leads to ungrammaticality (1.58b).

- (1.58) (a) *Daje mu ga.*  
gives him-cl.dat it-cl.acc  
'He gives it to him.'
- (b) \**mu ga daje.*  
him-cl.dat it-cl.acc gives  
'He gives it to him.'

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<sup>11</sup>The issues involved in the debate on whether pronominal clitics are phrasal or head elements are drastically simplified here. However, discussing these issues would take me outside my main purpose of this chapter, which is to outline the properties of LVM structures.

However, the fronting of the finite verb that occurs here most likely does not involve a violation of the HMC, since there is no  $X^0$  which the finite verb moves across. Moreover, *by definition* LVM structures are only those where a non-finite verb is displaced over another verbal position. Therefore, data of the type (1.58a) are not included, rightly or wrongly, in the set of data under discussion. In the rest of the thesis, I will by and large disregard the issues raised by pronominal clitics.

### 1.12 Conclusion

In the course of this chapter I have discussed properties of LVM, restricting my discussion largely to SC. I tried to keep the overview of the data pretheoretical as much as possible. I noted the following properties of LVM:

- (a) LVM data are not a uniform set. Two types of construction need to be distinguished. Local LVM, associated with structures of the type  $[V_2 - V_1]$ , and non-local LVM, where the lowest verb moves over the sequence of two verbal heads ( $[V_3 - V_1 - V_2]$ ). In addition, I argued that LVM over non-clitic auxiliaries should be seen as non-local LVM-type fronting.
- (b) The possibility of LVM, as well as its properties, depends on the type of the auxiliary. Type 1 auxiliaries are clitics, which in certain contexts licence obligatory participle fronting; Type 2 auxiliaries are non-clitic, and they licence LVM optionally; while Type 3 (negative and emphatic forms) disallow it completely.
- (c) LVM is strictly clause bound
- (d) LVM over Type 1 auxiliaries creates structures where the participle and the auxiliary have to be adjacent. This requirement is not observed in the context of non-clitic auxiliaries.
- (e) LVM over clitic auxiliaries is restricted to matrix clauses, while LVM across non-clitics is possible in both embedded and root environments.

- (f) LVM obligatorily results in the initial placement of the participle only in the context of clitic auxiliaries.
- (g) LVM is blocked by a set of elements, the common characteristic of which is that they are placed in a high structural position. In SC this set includes: subjects, sentential adverbs, the question particle *li* and negation.

### 1.13 The structure of the thesis

The structure of the rest of the thesis is as follows. In the next chapter I discuss the syntax of clitic auxiliaries in SC. First, I provide a descriptive overview of their morphology, and syntactic distribution. After that, I turn my attention to the issue of their placement. In particular, I will consider the question of which grammatical module - syntax or phonology - is responsible for the second position requirement on SC clitics. I argue that their syntactic distribution arises out of the interaction of both components of the grammar, following the analysis proposed by Bošković (1995, 2001). In this chapter, I will also consider how different theoretical views on clitic placement interact with theoretical views and analyses of LVM. I pay attention to issues concerning the placement of the participle and the so-called last resort view of LVM.

I open chapter 3 by providing an overview of the theory of locality head chains. This is followed by the discussion of a possible motivation for either maintaining the strongest version of the HMC, or for the relaxation of the locality principles so as to allow for a certain set of its violations. The locality of  $X^0$  chains can be void in at least two ways: (i) by allowing long movement of heads and (ii) by allowing excorporation. The first view entails that  $X^0$ s need not move to the next c-commanding head position, and forms the kernel of the so-called long head movement analyses of LVM. The second view assumes local head raising, but departs from the principle formulated in Baker (1988) that complex  $X^0$ s are islands to extraction. It is an essential characteristic of

## 1. Introduction

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some analyses of LVM, for instance those advanced in Bošković (1995, 2001). Both approaches to LVM data are overviewed and discussed in the closing sections of the chapter.

Chapter 4 is by and large devoted to the proposal developed by Ackema and Camdzic (2003). This approach to LVM is characterised by the basic claim that non-finite verbs, as well as other predicates involved in LVM-type fronting, are base generated above the position of the auxiliary. Given that such structures are derived directly by the application of Merge, the auxiliary has to incorporate into the participle so as to create a structural configuration in which  $\theta$ -role assignment can proceed. According to this analysis, LVM involves complex predicate formation, from which several of the properties of LVM structures discussed in chapter 1 can be derived. The conclusion reached in this chapter is that an analysis along these lines should be maintained only for local LVM patterns. Non-local LVM, on the other hand, should be treated in different way.

Just what is a correct analysis of non-local LVM patterns is an issue discussed in chapter 5. I argue that these patterns are best viewed in terms of remnant phrasal movement. I show how the totality of LVM patterns can be obtained by assuming (i) that local LVM is an instance of  $X^0$  displacement (as formalised in chapter 4), and (ii) that non-local LVM is movement of the verbal XP. I argue that non-local LVM involves the creation of remnant VPs, radically devoid of all constituent parts, bar the head. Such remnants move to a position projected high within the IP domain of the clause. I introduce a principle which determines the lower bound on the locality of phrasal movement and show how assuming this condition, together with additional assumptions on the landing site of the phrasally moved non-finite verb, derives a certain set of properties of LVM structures.

Chapter 5 is followed by the conclusion.

## Chapter 2

# LVM and the syntax of clitic auxiliaries

### 2.1 Auxiliary types and LVM

As I have outlined in chapter 1, section 2, we can divide auxiliaries into three distinct sets according to their interaction with LVM-type predicate fronting. The first class, which I have termed Type 1, requires obligatory LVM, but only in absence of some constituent placed in the pre-auxiliary position. In SC, these are enclitic elements. Essentially, the same state of affairs holds for Bulgarian, Slovenian, Slovak, Czech, Old Romance, etc. Enclitics which trigger LVM can be constrained either by the second position requirement, as in SC, Slovenian, Czech, etc, or may be preverbal clitics, placed adjacent to the verb, and preceding it, unless this order is inverted by LVM, as is the case in Bulgarian.

In later sections of this chapter I will look at the second position constraint in more detail. Here, I will briefly point out basic properties of preverbal positioning. In the Slavic group, Bulgarian and Macedonian have clitics of this type. In Bulgarian, Type

## 2. LVM and the syntax of clitic auxiliaries

1 auxiliaries (i) cannot stand clause initially (2.1), (ii) have to be adjacent to the verb, from which nothing can separate them (2.2), and (iii) come to precede the lexical verb only by the application of LVM (2.3a).<sup>1</sup> Note that (2.3a) can be recognised as LVM since the participle is sentence initial, VP topicalisation is impossible (2.3b), and, in fact, nothing can intervene between the fronted verb and the auxiliary (2.3c).

- (2.1) \**e pročel knjigata.* BULGARIAN  
has read book-def  
'He has read the book.'
- (2.2) (a) *Petur e pročel knjigata.*  
Peter has read book-the  
'Peter has read the book.'
- (b) \**Petur e knjigata pročel*  
Peter has book-def read
- (2.3) (a) *Pročel sam knjigata.*  
read am-cl.1sg book-def  
'I have read the book.'
- (b) \**Pročel knjigata sam.*  
read book-def am-cl.1sg
- (c) \**Pročel včera sam knjigata.*  
read yesterday am-cl.1sg book-the

Offset from the rest of the LVM languages is Breton, where Type 1 auxiliaries are not clitic elements. Nevertheless, they are still prohibited from sentence initial placement by the V2 constraint, which bars all finite verbs, auxiliary or otherwise, from appearing in this position (2.4a). The first position can be occupied by some topicalised XP (2.4b), or by the LVM-fronted verb (2.5).

- (2.4) (a) \**Neus Lan klevet e dad.* BRETON  
has Alan heard his father  
Alan has heard his father.' (Schafer 1997)

<sup>1</sup>Unlike in Bulgarian, Macedonian clitics are not prohibited from sentence initial placement.

## 2. LVM and the syntax of clitic auxiliaries

- (b) *Lan neus klevet e dad.*  
 Alan has heard his father  
 'Alan has heard his father.'

- (2.5) *Lennet en deus Yann al levr.* BRETON  
 read 3sg have Yann the book  
 'Yann read the book.'

The second set of auxiliaries, or Type 2, are not clitics. They are not barred from sentence initial position, as evidenced by the grammaticality of (2.6a) and (2.7a). LVM across auxiliaries belonging to this set is not obligatorily triggered, and is associated with a narrow focus interpretation of the participle.

- (2.6) (a) *Budeš li ga vidjela, zovni me.*  
 aux-cond.2sg Q him-cl.acc seen, call me  
 'If you see him, call me.'

- (b) *Ako vidjela ga budeš, zovni me.*  
 if seen him-cl.acc aux-cond.2sg, call me  
 'If you see him, call me.'

- (2.7) (a) *Šte e izpil konjaka.* BULGARIAN  
 will is-cl drunk cognac-def  
 'He will have drunk the cognac.' (Franks and King 2000:64)

- (b) *Izpil šte e konjaka.*  
 drunk will is-cl cognac-def

Finally, the third set of items (or Type 3) disallow the LVM-type of predicate fronting. They are non-clitics, hence their distributional properties overlap with Type 2 auxiliaries, both being possible in initial position. In SC, the blocking elements are negative and emphatic forms of second position clitic auxiliaries. Note that negative auxiliaries belong to the blocking set in other LVM languages, namely Bulgarian, Breton, and Romanian. On the other hand, in Czech and Slovak, participle fronting is possible in negative contexts. This dichotomy can be related to the morphological difference between the two language sets just mentioned. If negation blocks LVM,

## 2. LVM and the syntax of clitic auxiliaries

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then negation is realised on the auxiliary. If, on the other hand, negation does not interfere with LVM, then negation attaches to the participle. Consider the contrast in (2.8) and (2.9). The first example is taken from SC. The negative morpheme is associated with the auxiliary, and LVM is blocked. The second example (2.9) is taken from Slovak. The negative morpheme is realised on the participle, and LVM can take place.<sup>2</sup>

- (2.8) (a) *Nije mu pisala pismo.*  
not-is him-cl.dat written letter-acc  
'She has not written a letter to him.'

- (b) *\*Pisala mu nije pismo.*  
written him-cl.dat not-is letter-acc

- (2.9) (a) *Ja som ne napisál list.* SLOVAK  
I am-cl.1sg not written letter  
'I have not written a letter.' (Rivero 1991)

- (b) *Ne napisál som list.*  
not written am-cl.1sg letter

### 2.2 SC clitic auxiliaries

As we have seen in chapter 1, section 11, the set of SC special clitics, in the sense of Zwicky (1977), includes auxiliaries, pronominal elements, and the question (or focusing) particle *li*. They cluster together in a sequence that cannot be broken up by any intervening material. The clitics within the cluster are rigidly ordered, so that the initial element is the question particle, followed by clitic auxiliaries, which, in turn, are followed by the pronominal ones. The last member of the cluster is the third person auxiliary clitic *je*. Note that this is the only auxiliary which is not slotted into the second position of the cluster.

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<sup>2</sup>For the interaction of negation and LVM see Rivero (1991).



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## 2. LVM and the syntax of clitic auxiliaries

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(2.10) li – aux – dat – acc – gen – se – je

Clitic auxiliaries are forms of *biti* ‘to be’ or *htjeti* ‘to want’, used in the formation of periphrastic tenses. Present tense forms of ‘to be’ also have a copular usage. In the following subsections, I provide a descriptive overview of clitic morphology and the relevant tenses.

### 2.2.1 Present tense clitic forms of *to be*

The present tense forms of *biti* (‘to be’) can be realised as non-clitic, as well as clitic, auxiliaries. Both strong and clitic forms are morphologically marked for present tense and subject agreement, expressing person and number distinctions. The morphological relation between the clitic and full auxiliaries is quite transparent and regular. Full forms consist of the stem *jest* plus the inflectional suffix. Clitics, on the other hand, consist of the agreement suffix and the root final consonant /s/, lacking the stem portion of their full counterparts. The exception to this rule is the third person singular form, which consists only of the reduced root morpheme *je*. All strong forms carry lexical accent, while clitics are accentless.<sup>3</sup> Both strong and clitic forms of *biti* are given in table 2.1.

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<sup>3</sup>SC is a pitch accent language, distinguishing four tonal patterns: long rising, short rising, long falling and short falling. In the transcription used here (ṽ) stands for a short falling tone, (v̇) for short rising, (v̂) for long falling and (v̌) for long rising.

## 2. LVM and the syntax of clitic auxiliaries

|     | BITI 'to be' |        |
|-----|--------------|--------|
|     | full         | clitic |
| 1sg | jèsam        | sam    |
| 2sg | jèsi         | si     |
| 3sg | jèste/jě     | su     |
| 1pl | jèsmo        | smo    |
| 2pl | jèste        | ste    |
| 3pl | jèsu         | su     |

Table 2.1: Copula/present tense forms of 'to be'

The present tense forms of 'to be' are used as copulas as well as in the formation of periphrastic tenses, namely the perfect and the pluperfect. In copular usage, they get present tense interpretation. The choice between using a full or using a clitic form is determined by discourse factors. Strong forms carry focus, and receive an emphatic interpretation. In neutral, non-emphatic, contexts, clitic forms are used. Note that in copular sentences, non-verbal predicates show subject agreement with number and gender markings.

(2.11) (a) *Petar je dobar plesač.*  
 Peter-nom is-cl good-sg.masc dancer-sg.masc  
 'Peter is a good dancer.'

(b) *Milena je dobra plesačica.*  
 Milena-nom is-cl good-sg.fem dancer-sg.fem  
 'Milena is a good dancer.'

As noted, when combined with other functional and lexical verbs present tense forms of *biti* express two periphrastic tenses, namely the perfect and pluperfect. Both involve the lexical verb in the form of an active participle, the so called *l*-participle. In SC, as well as in other Slavic languages, participles carry subject agreement. They

## 2. LVM and the syntax of clitic auxiliaries

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are marked for person and gender features. Participial forms are easy to recognise by the suffix containing the segment /l/, present in all except singular masculine forms, where the suffix is /o/. An example of the paradigm is given below.

(2.12) *l-participle: raditi ('to work'):* singular      *l-participle: raditi ('to work'):* plural

radio – masc. sg.

radili – masc. pl.

radila – fem. sg.

radile – fem. pl.

radilo – neut. sg.

radila – neut. pl.

If clitic auxiliaries combine with only a participle of the main verb, the resulting periphrastic tense is a perfect, expressing temporal reference which in English corresponds (roughly) to simple past and present perfect. The conditions on the use of full and clitic forms are the same as in copular constructions. In emphatic contexts full forms are used (2.13b), and clitic forms otherwise (2.13a).

(2.13) (a) *Petar je odšetao do prodavnice.*

Peter-nom is-cl walked to shop

'Peter has walked to the shop.'

(b) *Petar JESTE odšetao do prodavnice.*

Peter-nom is walked to shop

'Peter HAS walked to the shop.'

If a present tense form of the auxiliary combines with the lexical participle plus the participle of *biti* ('to be'), the resulting tense is a pluperfect. The pluperfect is almost obsolete nowadays, though still in usage. It is illustrated in (2.14a) and (2.14b). Again, the strong form of the auxiliary is only used when it carries focus. Usually, therefore, we find that the clitic form of the auxiliary is used in this construction.

(2.14) (a) *Petar je bio radio po čitav dan.*

Peter-nom is-cl been worked on whole day

'Peter had worked all day long.'

## 2. LVM and the syntax of clitic auxiliaries

- (b) *Petar jeste bio radio po čitav dan.*  
 Peter is been worked on whole day  
 ‘Peter HAD worked all day long.’

### 2.2.2 Present tense forms of *to want*

The present tense forms of *htjeti* (‘to want’) are used in the formation of the future tense. They can be clitic or strong forms, which differ in accentual and segmental make-up. Full forms carry lexical accent, while clitic forms are accentless. Strong forms consist of the stem *hoć* and the inflectional suffix which carries present tense and subject agreement. Clitics are morphologically related to full forms. They lack the stem and are realised as the root final consonant /ć/ plus the suffix. All the forms are given in table 2.2.

|     | HTJETI ‘to want’ |        |
|-----|------------------|--------|
|     | full             | clitic |
| 1sg | hoću             | ću     |
| 2sg | hōćeš            | ćeš    |
| 3sg | hōće             | će     |
| 1pl | hōćemo           | ćemo   |
| 2pl | hōćete           | ćete   |
| 3pl | hōće             | će     |

Table 2.2: Future tense auxiliary clitics

The formation of the future tense involves the use of the present tense of the auxiliary *htjeti* (‘to want’). Depending on dialectal variation, it combines with the infinitive form of the main verb, or with a clause introduced by the complementizer *da* (‘that’). The first option is typical for the western dialects of the language (2.15a), while the second is characteristic of the eastern ones (2.15b).

## 2. LVM and the syntax of clitic auxiliaries

- (2.15) (a) *Petar će odigrati partiju šaha.*  
 Peter-nom want-cl.3sg play-inf game chess-gen  
 ‘Peter will play a game of chess.’
- (b) *Petar će da odigra partiju šaha.*  
 Peter-nom want-cl.3sg that play-3sg.pres game chess-gen

Note that in the eastern variant the main verb shows up with present tense morphology and agrees with the subject in person and number. The infinitival form of the lexical verb, used in the western variants, is easily recognised by the suffix *-(i)ti* or *-ći*. It does not bear any agreement features.

- |        |                         |                        |
|--------|-------------------------|------------------------|
| (2.16) | <i>-iti infinitives</i> | <i>-ći infinitives</i> |
|        | raditi (‘to work’)      | ići (‘to go’)          |
|        | učiti (‘to study’)      | teći (‘to flow’)       |
|        | plesati (‘to dance’)    | peći (‘to bake’)       |

Much like in the formation of the perfect, the full form is appropriate only in emphatic contexts, otherwise the clitic form is used.

- (2.17) (a) *Naca će ispeći krofni.*  
 Naca-nom want-cl.3sg bake-inf doughnuts-gen  
 ‘Naca will make some doughnuts.’
- (b) *Naca HOĆE ispeći krofni.*  
 Naca-nom want-cl.3sg bake-inf doughnuts-gen  
 ‘Naca WILL make some doughnuts.’

### 2.2.3 Aorist forms of ‘to be’

Finally, clitic auxiliaries can also be the aorist forms of *to be*. They are used in the formation of the conditional (where traditional grammar recognises a difference between Conditional I and Conditional II, see below). The clitic forms and the full forms of the auxiliary do not differ segmentally, the only difference is the presence vs.

## 2. LVM and the syntax of clitic auxiliaries

absence of lexical accent (cf. table 2.3). They are marked for subject agreement and aorist aspectual properties.

|     | BITI 'to be' |        |
|-----|--------------|--------|
|     | full         | clitic |
| 1sg | bīh          | bih    |
| 2sg | bī           | bi     |
| 3sg | bī           | bi     |
| 1pl | bīsmo        | bismo  |
| 2pl | bīste        | biste  |
| 3pl | bī           | bi     |

Table 2.3: Conditional auxiliary clitics

Conditional I is formed by the combination of the aorist form of the auxiliary and the *l*-participle (2.18), while Conditional II additionally includes the *l*-participle of the verb *to be* (2.19). Apart from syntactic differences between the two, they are, as might be expected, interpretatively different. Conditional I is associated with a present tense situation, roughly corresponding to English *I would . . .*. Conditional II, on the other hand, refers to what *might have been* (as with the difference between the perfect and the pluperfect, the participle of *to be* contributes past reference) Note that full (accented) forms of the auxiliary are used in emphatic contexts only again, much like other strong forms.

(2.18) *On bi volio otići na more.*  
 he would loved go-inf on sea-side  
 'He would love to go to the sea-side.'

(2.19) *On bi bio volio otići na more.*  
 he would been loved go-inf on sea-side  
 'He would have loved to go to the sea-side.'

## 2.3 Negative auxiliaries

Negation in SC is expressed by the negative morpheme *ne* which attaches to the finite verb. If the tense suffix is realised on the lexical verb, as for example in sentences involving present tense, the negation attaches onto the lexical verb (2.20a). If, on the other hand, tense is carried by the auxiliary, negation is released on the auxiliary (2.20b). Crucially, negation can never be realised on the participle (2.20c).

- (2.20) (a) *Ja ne vidim Ivana.*  
I NEG see-pres.1sg Ivan-acc  
'I do not see Ivan.'
- (b) *Ja nisam vidjela Ivana.*  
I NEG-is-cl seen Ivan  
'I have not seen Ivan.'
- (c) *\*Ja sam ne vidjela Ivana.*  
I is-cl NEG seen Ivan  
'I have not seen Ivan.'

Negative auxiliaries are morphologically analysable as consisting of the negative morpheme *ne* followed by a clitic auxiliary. Any of the clitic forms discussed above (present and aorist forms of *to be*, as well as present tense forms of *to want*) may carry negation. The negative morpheme and the finite verb always form one morpho-phonological entity.<sup>4</sup> They cannot be separated by any intervening material, in any context whatsoever, except when the negation scopes narrowly over a non-verbal constituent as in (2.21).

- (2.21) *Ja sam vidjela NE Ivana, NEGO Petra.*  
I is-cl seen NEG Ivan-acc BUT Peter  
'It was not Ivan that I have seen, but Peter.'

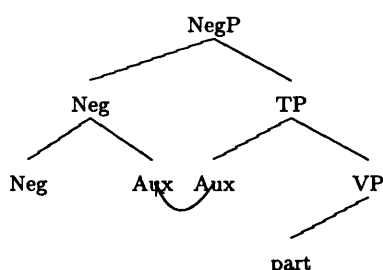
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<sup>4</sup>Notice that in the examples above the negative morpheme and the lexical verb are spelled as two words. This does not reflect the actual linguistic status of these examples, but is simply a spelling convention.

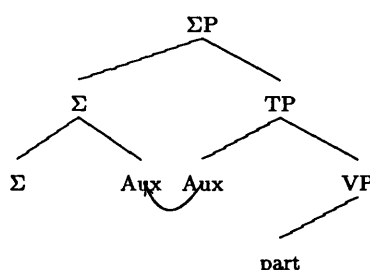
## 2. LVM and the syntax of clitic auxiliaries

Progovac (1994, 1996), Rivero (1991, 1994), Tomić (1996), among others, argue that negative auxiliaries are syntactically two distinct  $X^0$ , negation and the clitic  $X^0$ , each heading their own projection. The auxiliary then moves to negation and adjoins to it, so that a complex negative head is created, as illustrated in (fig. 2.1a).<sup>5</sup>

(Fig. 2.1a)



(Fig. 2.1b)



The representation in (fig. 2.1a) is not quite correct though. Emphatic and negative auxiliaries are in complementary distribution. This suggests that negation and the head expressing emphasis are merged into one and the same position. A more precise representation would therefore indicate that the two can both be the head of a general polarity projection (compare Laka's 1990  $\Sigma$  functional projection), as given in (fig. 2.1b).

Note that after incorporation the resulting head is not a part of the clitic cluster. Consider for instance the following contrast. The second person singular clitic *si* (and in fact all other auxiliaries apart from the third person singular *je*) precede

<sup>5</sup>Bošković (2001) and Caink (1998), argue that the negative auxiliary is introduced into syntax as an indivisible atomic head. The drawback of this position is that the transparent connection between the (apparent) internal structure of the negative auxiliaries on the one hand, and the form of the nonnegative clitic auxiliaries and the negative element in isolation on the other hand, becomes something of a coincidence.



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## 2. LVM and the syntax of clitic auxiliaries

pronominal clitics, and follow the question particle *li* (2.22a). However, negative auxiliaries cannot stand in this same position, where they interrupt the clitic cluster (2.22b). They must be placed outside of this cluster (2.22c).

(2.22) (a) *Da li si ga vidjeo*  
comp Q are-cl him-cl.acc seen  
'Have you seen him?'

(b) *\*Da li nisi ga vidjeo?*  
comp Q NEG-are him-acc seen

(c) *Nisi li ga vidjeo?*  
NEG-are Q him-cl.acc seen  
'Haven't you seen him?'

In fact, the distributional differences between the negative auxiliary and clitic auxiliaries go even further. We have seen that the former may stand in the sentence initial position. Moreover, they block LVM. Finally, they tolerate the fronting of a constituent larger than the participle, namely full VPs. Hence the crucial contrast between LVM and VP fronting in the context of negative auxiliaries (2.23a and b).

(2.23) (a) *\*Kupili nismo ploču.*  
bought NEG-is-cl record-acc  
'We have not bought a record.'

(b) *Kupili ploču nismo.*  
bought record-acc NEG-axu-cl.3sg  
'We have not bought a record.'

## 2.4 Placement of SC clitic auxiliaries

It is fair to say that the most studied aspect of the syntax of SC are its second position clitics. The available range of readings on this subject is extensive (Abels 2000, 2001, Anderson 1988, 1996, 2000, Bennett 1987, 2002, Boeckx and Stjepanović 2000, Browne 1975, Bošković 1995, 1999, 2001, Caink 1998, Camdzic and Hudson

## 2. LVM and the syntax of clitic auxiliaries

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2002, Franks 1998, Halpern 1992, 1995, Progovac 1993, 1996, 2000, Radanović–Kocić 1996, Rivero 1993, 1997, Roberts 1993a, Schütze 1994, Stjepanović 1998, Tomić 1996, Wilder and Čavar 1994, Zec and Inkelas 1990, etc).

The major issue discussed in the literature is the role of phonology in determining the clitic placement. With respect to this, the analyses of SC clitics can be divided roughly into three groups:

- (i) Those according to which the second position effect is an entirely a syntactic phenomenon as, for example, in Progovac (1993, 1996, 2000), Rivero (1997), Tomić (1996), Wilder and Čavar (1994), etc.
- (ii) Those which maintain that clitic positioning is entirely a phonological phenomenon, such as Caink (1998), Radanović–Kocić (1996).
- (iii) Those where both syntax and phonology determine the positioning of clitics. Such analyses are advanced in Bošković (1995, 2001), Halpern (1995), Schütze (1994), etc.

Let us first review the data in order to understand the problem.

### 2.4.1 The basic pattern

SC clitics are second position (P2) clitics (also known as Wackernagel clitics). Not only are they prohibited from sentence initial placement, as we have seen repeatedly, but they cannot appear in any position lower than the second one either. In principle, the clitic cluster allows only one constituent of the clause to precede it. If we label this constituent 'X' and enclose it within square brackets, the placement facts can be stated as follows:

- (2.24) (a) [X] – clitic ...  
(b) \* clitic ...

## 2. LVM and the syntax of clitic auxiliaries

(c) \*[X]<sub>1</sub> – – [X]<sub>2</sub> – – clitic ...

The clitics are not specific in the choice of their host. The initial constituent can be either an X<sup>0</sup>, or an XP, of any type. For example, it can be a subject DP (2.25a), an object DP (2.25b), a wh-phrase (2.25c), a PP, an adverb, etc.

(2.25) (a) [*Petar*]<sub>X</sub>    *je*    *volio*    *svoju*    *baku*.  
                  Peter-nom is-cl loved his    grandmother-acc  
                  ‘Peter loved his grandmother.’

(b) [*Svoju baku*]<sub>X</sub>                    *je*    *volio*.  
                  his    grandmother-acc is-cl loved  
                  ‘He loved his grandmother.’

(c) [*Koga*]<sub>X</sub>    *je*    *Petar*            *volio*.  
                  who-acc is-cl Peter-nom loved  
                  ‘Who did Peter love?’

In embedded clauses, the clitic cluster preserves its second position placement by immediately following the complementizer *da* (‘that’), from which it cannot be separated. The example in (2.26a) illustrates embedded P2, while (2.26b) shows that the complementizer and the clitic have to be immediately adjacent. Embedded topicalisation to the position intervening between the clitic and its host is impossible.

(2.26) (a) ... [*da*]<sub>x</sub>    *je*    *volio*    *svoju*    *baku*.  
                  ...that is-cl loved his    grandmother-acc  
                  ‘...that he loved his grandmother.’

(b) \*... [*da*]<sub>x</sub>    [*svoju baku*]<sub>x</sub>                    *je*    *volio*.  
                  ...that his    grandmother is-cl loved

### 2.4.2 Delayed clitic placement

The patterns given in the previous section are complicated by several features of the SC P2 system. The clitic cluster may be found in a position lower than the second one under a set of conditions, which seemingly have to be defined in prosodic terms.

## 2. LVM and the syntax of clitic auxiliaries

In other words, the pattern which was shown to be ungrammatical in (2.24c), is in fact well formed if either (i) the initial constituent ( $[X]_1$  in 2.24c) is offset from the rest of the clause by a pause, or (ii) the initial constituent is heavy (long enough). Under these conditions, the clitic can be placed in third rather than second position – so-called ‘delayed clitic placement’.

Consider the examples in (2.27a) and (2.27b). The appositive is offset from the rest of the clause by a typical parenthetical intonation, meaning that on both its right and left edge there is a prosodic break. (2.27a) shows that clitics cannot be placed immediately after the parenthetical i.e. immediately after a pause. (2.27b), on the other hand, is well formed, due to the fact that the clitic is not placed in a position immediately following an intonational break in the clause. This illustrates condition (i) above.

- (2.27) (a) *\*Ja # tvoja mama # sam ti obećala kupiti*  
 I your mother am-cl you-cl.dat promised buy-inf  
*sladoled.*  
 ice-cream  
 ‘I, your mother, promised to buy you an ice-cream.
- (b) *Ja # tvoja mama # obećala sam ti kupiti*  
 I your mother promised am-cl you-cl.dat buy-inf  
*sladoled.*  
 ice-cream

The effects of condition (ii) can be seen in the following example (2.28). The initial constituent is quite long, in fact, prosodically speaking, it is a branching phrase, consisting, as we can easily count, of three phonological words. The clitic is in the third position of the clause, preceded by an LVM-fronted verb.

- (2.28) *Moj najbolji prijatelj, otišao je u Indiju.*  
 my-nom best-nom friend-nom gone is-cl to India  
 ‘My best friend has gone to India.’

Much like the parenthetical in (2.27) above, long constituents introduce prosodic breaks (Zec and Inkelas 1990), although the pause after them may not necessarily be

## 2. LVM and the syntax of clitic auxiliaries

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easily noticeable for a listener. It is worth comparing (2.28) with (2.29). The latter example is, in fact, ungrammatical. The difference between the two is that the initial subject DP is quite 'heavy' in the well formed one, while in the ungrammatical one, the subject DP is short.<sup>6</sup>

- (2.29) \**Ivan otišao je u Indiju.*  
Ivan-nom gone is-cl to India  
'Ivan has gone to India.'

Condition (ii) kicks in when the initial constituent consists of two or more phonological words. This means that, if we add, for example, a modifying element like a possessive pronoun to the subject DP, the third position of the clitic should be possible. This is indeed the case:

- (2.30) *Moj prijatelj otišao je u Indiju.*  
my friend gone is-cl to India  
'My friend has gone to India.'

The XPs which push clitics into a lower position along the lines just outlined are known as 'heavy constituents'. This notion of heaviness has to be stated with reference to *prosodic* weight, so that only prosodically branching elements count as heavy. Notice that syntactic branching seems to be irrelevant (or epiphenomenal at least). The reason is that syntactically branching elements do not necessarily form prosodically complex constituents. For instance, under the assumption that nouns are always complements of a determiner, DPs are always branching constituents. However, if the determiner is phonologically empty, such a phrase will not count as complex as far as prosody is concerned (see Zec and Inkelas 1990 for more discussion of the influence of heavy constituents on cliticisation).

Note that the two conditions, (i) and (ii) above, can be easily collapsed into one by formulating a general statement to the effect that delayed placement is caused by the presence of prosodic boundaries. (In other words, the second position requirement

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<sup>6</sup>(2.29) can be made well formed if the subject DP were to be offset by a pause.

## 2. LVM and the syntax of clitic auxiliaries

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would refer to a prosodic, rather than a syntactic, domain; see for example Boskovic 2001). However, I keep them apart since they have somewhat different properties. Parentheticals introduce obligatory delayed placement – the clitic cluster cannot surface at the right edge of the parenthetical. Heavy constituents, on the other hand, trigger delayed placement only optionally, with clitics still being possible in the second position of the clause (2.31)

- (2.31) *Moj najbolji prijatelj je otišao u Indiju.*  
my best friend is-cl gone to India  
'My best friend has gone to India.'

Apart from parentheticals and heavy constituents, delayed placement is also caused by a set of lexical items which includes some conjunctions (*i* 'and', *a* 'but') and propositions (*u* 'in', *na* 'on', *po* 'on', etc). These elements are prosodically weak enough to qualify as phonological clitics, showing no special syntactic behavior. Whenever clitics interact with one of these items, we have one general pattern, namely (2.32), where X stands for a phonological clitic:

- (2.32) (a) \*[X] – CL – [Y]  
(b) [X] – [Y] – CL

Given the data discussed in this section, it is legitimate to ask whether the P2 condition is primarily determined by phonology or by syntax. If it is determined by phonology, then we may account for their positioning by postulating some phonological process which puts clitics in their place. In fact, such accounts of SC cliticisation have been put forward (see the references above). However, the data presented so far do not provide conclusive evidence that clitic placement has to be understood in phonological terms. An alternative position would be to say that, while phonology constrains clitics to second position, it ultimately does not cause the placement of clitic auxiliaries in this position. In other words, it may be that syntax determines the positioning of clitics, just as it determines the positioning of nonclitics, and that

phonology consequently filters out any structure in which a clitic does not find itself in second position. This position is defended in Bošković (2001), among others, and will be discussed in the closing section of this chapter.

### 2.4.3 Split constituents

SC has an option of clitic placement such that a clitic is found between two portions of the same constituent. For instance, there is a minimal pair of the kind (2.33a) and (2.33b) below, differing in the fact that in the (a) example the cluster follows the complete object DP, while in the (b) example it is preceded by the first word of this constituent only. In the terminology of Halpern (1992, 1995), the (a) example is an instance of second daughter (2D) placement, while (b) is an instance of second word placement (2W).

- (2.33) (a) *[Svoju baku]<sub>XP</sub> je poljubio.*  
           his-acc grandmother-acc is-cl kissed  
           ‘He kissed his grandmother’
- (b) *[Svoju]<sub>XP</sub> je baku poljubio.*  
           his-acc is-cl grandmother-acc kissed

Notice that, at first glance at least, 2W placements can be seen as motivation for a phonological analysis of SC second position constraint. In fact, initially, under the assumption that left branch extraction is universally prohibited, 2W placements were considered evidence against syntactic analyses (see for instance Spencer 1991, ch. 9, section 1.1).

However, it is fairly easy to check whether split constituent patterns involve derivation by syntactic or phonological mechanisms. The test is simple: if only clitics can intervene between subconstituents of a phrase, then (in all likelihood) such patterns are not derived in syntax. If, on the other hand, other, non-clitic material can intervene, 2W placements are derived by syntactic means. The reasoning is that even

## 2. LVM and the syntax of clitic auxiliaries

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if phonology can manipulate and reorder clitics, it cannot reorder non-clitic constituents. Then, if non-clitic material can intervene in the same position as clitics, positing additional phonological mechanisms to account for 2W clitic placements is, at best, superfluous. Consider the following:

- (2.34) *Svoju Ivan ljubi baku.*  
his Ivan-nom kisses grandmother-acc  
'Ivan is kissing his grandmother.'

In (2.34) the object DP is split by an intervening verb and the sentential subject. This is positive evidence that the material which can break up two portions of the same constituent may be of non-clitic nature. According to the test above, the conclusion that the split constituent placement of the clitic in (2.33b) is not an output of some phonological positioning mechanism seems reasonable.

That both (2.33a) and (2.33b), as well as the majority of split constituent patterns involve syntactic derivation is now (almost) generally accepted. There is, however, a set of cases which are more difficult to resolve without some recourse to phonology. These involve patterns where clitics split up a subset of constituents generally considered as islands to extraction such as proper names, co-ordinate phrases, and PPs.

To get a flavour of the problem, consider the data in (2.35a) and (2.35b).<sup>7</sup> In both examples the sequence of the preposition, determiner, adjective and noun is interrupted by some sentential constituent and divided in two portions – [P – Det] on one hand, and [Adj – N] on the other. However, the two sentences differ in their grammaticality status. (2.35a), where the intervening element is a clitic, is well formed. (2.35b), however, where non-clitic constituents disrupt the prepositional phrase, is ruled out. Therefore, by the same test as above, which rests on the possibility of non-clitic elements intervening in a given position, the (a) example cannot be derived

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<sup>7</sup>The data are due to Schütze (1994). The same work also provides a detailed overview and discussion of other split constituent patterns problematic for the syntactic analysis.



## 2. LVM and the syntax of clitic auxiliaries

syntactically. Hence, we seem to have evidence for the necessity of a phonological treatment of second position clitic placement.

- (2.35) (a) *U ovu je veliku sobu ušao.*  
           in this is-cl big room entered  
           ‘He entered this big room.’
- (b) *\*?U ovu Jovan ulazi veliku sobu.*  
       in this Jovan enters-pres.3sg big room  
       ‘Jovan is entering this big room.’

However, it is not entirely clear to what extent this conclusion is forced, albeit that an alternative explanation is not available. It is arguably the case that split PP configurations in general are derived syntactically. Consider for instance (2.36) where non-clitic sentential constituents break up the prepositional phrase. By the test we are using, this fact alone suggests that there must be a possibility of syntactic derivation of split PPs.

- (2.36) *[U izuzetno veliku t<sub>1</sub>] <sub>2</sub> je Jovan ušao [sobu]<sub>1</sub> t<sub>2</sub>.*  
       in exceptionally big is-cl Jovan entered room  
       ‘Jovan entered an exceptionally big room.’

In fact, it has been convincingly argued that split PP patterns are derived by remnant movement (cf. Abels 2001, Fanselow and Čavar 2001, etc). The derivation of (2.36) involves the movement of the NP *room* out of the PP as in (2.37), followed by the subsequent PP topicalisation which leads to the pattern in (2.36).<sup>8</sup>

- (2.37) *je Jovan ušao [sobu]<sub>1</sub> [PP u izuzetno veliku t<sub>1</sub>].*  
       is-cl Jovan entered room in exceptionally big  
       ‘Jovan entered an exceptionally big room.’

<sup>8</sup>Incidentally, notice that the antecedent of the unbound trace i.e. the raised NP remains quite low. In other words, the movement which creates a remnant phrase does not have to place the constituent in some high position (as might be suspected) so the ungrammaticality of (2.35b) cannot be found along those lines.

## 2. LVM and the syntax of clitic auxiliaries

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This rudimentary inspection of the data puts us in the following position: there seems to be some evidence for a remnant movement analysis of split PPs given that non-clitic material may intervene. However, if a syntactic analysis can be maintained in general, the reason for the ungrammaticality of (2.35b) is not clear. Moreover, the contrasting (grammatical) status of (2.35a) involving clitic elements further complicates the issue.<sup>9</sup>

The question is whether an answer to this dilemma should be couched in phonological terms. If the derivation of (2.35a) involves phonological mechanisms, then there is no reason why the same mechanisms should not derive the rest of the P2 data, or perhaps only the subset of second position clitic placements which cannot be easily handled in syntactic terms. In particular, the syntactically problematic LVM may not be the output of the syntactic component at all, but rather, the result of a phonological operation, independently needed to derive the clitic P2.<sup>10</sup> The answer to this question that will eventually arise out of the discussion in this chapter is that the derivation of second position clitic placement in SC is not very likely to involve phonological mechanisms which are powerful enough so that they can reorder syntactic elements, although phonology itself has a significant role to play in determining their distribution. To see the reason for this conclusion we need to consider a wider set of data.

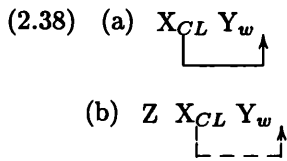
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<sup>9</sup>Bošković (2001:21) speculates that (2.35a) is in fact ungrammatical, but, nevertheless, acceptable since the intervening clitic material is not salient enough to disrupt the parsing of the structure. (2.35b), on the other hand, is ungrammatical, but also unacceptable, since the intervening material is salient and prominent enough to make the parse (in his words) ‘unavailable’.

<sup>10</sup>Notice that this can pertain to LVM over clitic auxiliaries. LVM over non-clitic elements is not easily reducible to phonology in this sense. Such a position would have to distinguish between LVM over clitics vs. LVM over non-clitics, and assume that they are different processes. The first one, then, would involve phonological derivation, while the second one syntactic. Notice, however, that if this is maintained, the problem of the displacement of the non-finite verbs over non-clitic auxiliaries persists, and so do the issues of the apparent HMC violations.

## 2.5 Prosodic Inversion

One way in which a phonological analysis has been formalised is known as Prosodic Inversion (PI). PI is a phonological reordering of terminals, proposed by Halpern (1992, 1995), and also taken up by King (1996) and Schütze (1994) as a mechanism for clitic positioning. PI takes a clitic CL and moves it to the right across the nearest prosodic constituent Y, where Y is defined as a phonological word (2.38a). The restriction that PI can apply only across the first prosodic word stems from locality/economy considerations, so that PI has to seek the closest available phonological host.



Notice that PI only applies in the configurations schematically represented in (2.38a). That is, the environments where PI is triggered are solely those where the clitic is stranded in initial position. If, however, the clitic is provided with some phonological host ‘Z’, as given schematically in (2.38b), PI is blocked.

PI analyses do not deny that cliticisation involves syntactic mechanisms, as well as phonology. In fact, according to this view syntax places clitics into some designated structural position they are assumed to be associated with. Depending on the particular instantiation of the proposal, the clitic cluster is argued either to be syntactically adjoined to Spec-IP (Halpern *ibid.*), or, alternatively, placed in  $C^0$  (Schütze *ibid.*). We can abstract away from the issue of which hypothesis is more likely to be correct, and go along with the latter proposal.

Then, XPs preceding the clitic cluster are brought into the pre-clitic position by syntactic movement.<sup>11</sup> To illustrate this, consider how the structures where the

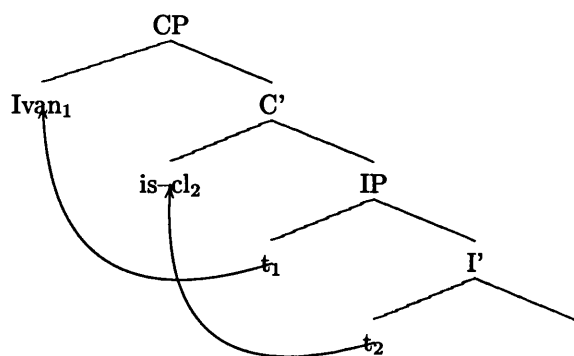
<sup>11</sup>Notice that by the definition in (2.38), PI cannot derive 2D placements anyway. It is constrained to apply across the nearest phonological *word*. 2D placements, involving the positioning of clitics after the first phonological *phrase*, are thus *a priori* excluded as possible PI derivations.

## 2. LVM and the syntax of clitic auxiliaries

subject DP precedes the clitic cluster are derived (2.39) and (fig. 2.2).

- (2.39) *Ivan je otišao na more.*  
 Ivan-nom is-cl gone to sea.  
 'Ivan has gone to the sea-side.'

(Fig.2.2)



The derivation of (2.39) involves at least two displacements. Firstly, the auxiliary clitic has to be moved from its position within the I domain and placed into the head position of C. Secondly, the subject DP *Ivan* has to be extracted from its Spec-AgrSP position and raised to Spec-CP. Note that when (2.39) is presented to phonology, PI will not be triggered, given that a phonological host of the auxiliary clitic is already provided by syntax. This feature of the system makes it obvious that PI is intended as a repair mechanisms, working only on those outputs of syntax which are at risk of crashing in phonology.<sup>12</sup>

Consider the predictions made by PI analysis of SC cliticisation. It is pretty clear that on this view syntax can always be overridden by phonology, and that W2 placement should be possible provided that phonological conditions are satisfied. The

<sup>12</sup>In Schütze (ibid.), but not in Halpern (ibid.), PI is explicitly understood in those terms.

## 2. LVM and the syntax of clitic auxiliaries

major phonological condition is that the first word of the sentence (i.e. the one that should come to precede clitics as the result of PI application) projects prosodic structure up to the level of phonological word and is not itself phonologically deficient. This, however, leads to overgeneration of the data, the problem which makes a PI analysis of clitic placement untenable.

Consider some of the instances of W2 placements, as in (2.40) and (2.41). They are predicted to be possible, but are, in fact, ungrammatical.<sup>13</sup>

- (2.40) \**Roditelji su se uspjehom studenta razili.*  
parents are-cl refl-cl successful-gen students-gen dispersed  
'The parents of successful students have dispersed.'

- (2.41) \**PREMA je Milanu Marija koračala, a ne od njega.*  
towards is-cl Milan Maria-nom walked, and not from him  
'Maria walked TOWARD Milan, and not away from him.'

Notice that the preposition in (2.41) is stressed, and hence it is not a phonological clitic. The examples in (2.40) and (2.41) are expressly ruled out by a syntactic analysis, since extraction of the DP *parents* in (2.40), and the movement of the preposition in (2.41) are not possible.<sup>14</sup> Therefore, the PI analysis of SC clitics overgenerates.

### 2.5.1 LVM as phonological operation

The possibility that LVM is a product of PI is examined in most detail in King (1996). Given that it may not be an independently needed mechanism of clitic positioning, the force of PI as an analysis of LVM is weakened. Nevertheless, it still remains as a possibility worth examining.

There are two issues I would like to distinguish. First, whether a PI analysis of LVM as proposed in King (1996), is tenable, and secondly, whether LVM has

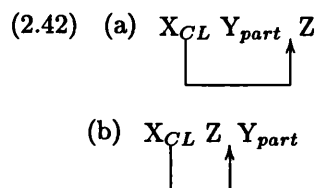
<sup>13</sup>These arguments against PI are due to Progovac (1996).

<sup>14</sup>There is independent evidence that the (2.41) cannot be derived by remnant movement. For some reason, the immediate complement of prepositions cannot be extracted in SC. For a particularly interesting thoughts on this see Abels (2001).

## 2. LVM and the syntax of clitic auxiliaries

properties such that it should be handled non-syntactically, at PF. If it turns out that the particular instantiation of the proposal is not optimal, the consideration of how PI deals with the data is also a test of the possibility that some mechanism akin to it, in the relevant sense that it applies at PF and operates on linear structure sensitive to phonological features, may be true.

The first point to note is that the derivation of LVM constructions, under this account, hinges on the assumption that the clitic has to be followed immediately by the verbal head i.e that the output of syntax has to be as in (2.42a). If the output of syntax was (2.42b), the clitic is predicted to attach to the intervening element Z, and LVM should be impossible.




Such a position gets a certain set of facts right. Recall from chapter 1, section 7, that LVM is blocked by high elements: sentential adverbs, subjects, negation and the question particle *li*. The impossibility of LVM over subjects and sentential adverbs is straightforwardly accounted for under the reasonable assumption that subject and adverbial XPs occupy hierarchically higher positions than participles. Then the input structures to PI are as in (2.42b), and LVM cannot take place.

Not all blocking effects are accounted for in the same way. The intervening status of negation does not fall under the structure in (2.42b). Instead, negative auxiliaries do not trigger PI, due to the fact that they are not phonological clitics.

A problem for an analysis along PI lines is the impossibility of participle fronting over the question particle *li*. It is wrongly predicted that PI can displace the clitic cluster, across the nearest word, and thereby that LVM across the question particle is possible.

## 2. LVM and the syntax of clitic auxiliaries

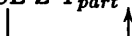
- (2.43) (a) \**Vidjela li si Petra u kinu?*  
           seen       Q   are-cl Peter-acc in cinema  
           'Did you see Peter in the cinema?'

- (b) [*li si*] *vidjela* ...  


However, whether this constitutes counterevidence is not entirely clear. One might say that question formation is a syntactic process, and does not necessarily fall under PI. What this effectively means is that the presence of an interrogative head in the syntactic structure triggers obligatory fronting of the finite verb, or a *wh*-element, or whatever element shares the relevant feature with the interrogative head. Given that the fronting is obligatory (and overt), structures with the clitics stranded in initial position will never be presented to PF, and hence, PI can never apply. Note, however, that King herself states that PI is involved in question formation. SC *yes/no* questions in non-periphrastic tense contexts can be formed by the movement of the finite verb over *li* as illustrated in (2.44), which she analyses as the outputs of PI.

- (2.44) *Ide li Petar u kino?*  
       goes-pres Q Peter-nom to cinema  
       'Does Peter go to the cinema?'

The falsification of PI is not an easy exercise. It would be provided if there were data of the type (2.45) (where *Z* stands for some constituent other than the non-finite verb), but where nevertheless LVM has applied. PI could not generate them, since it would have to apply non-locally.

- (2.45) CL Z *Y<sub>part</sub>*  


PI is difficult to prove false because SC is a free word order language, with semantically contentful elements being possible almost anywhere. A possible falsification of PI could come from the data involving the placement of manner adverbs. These constituents are base generated in the pre-VP position, as illustrated by (2.46b) and

## 2. LVM and the syntax of clitic auxiliaries

as convincingly argued by Godjevac (2000:208). Note that in their base generated positions, adverbs are compatible with broad focus interpretation.

- (2.46) (a) *Svirao je odlično čelo.*  
           played is-cl excellently cello-acc  
           ‘He has played cello excellently.’
- (b) *Petar je odlično svirao čelo.*  
           Peter-nom is-cl excellently played cello-acc  
           ‘Peter has played the cello excellently.’

Since local LVM constructions can have discourse interpretations which do not involve any focusing of the manner adverb, we may presume that these elements stay in their base generated (pre-VP) position in examples such as (2.46a). If this is so, then the input structure to PI is as given in (2.45) making LVM impossible.

Finally, consider how non-local LVM is dealt with. Participle fronting across non-clitic auxiliaries is outside the scope of PI for obvious reasons. However, the pattern  $[V_3 - V_1 - V_2]$  can be handled in these terms. Recall that, in SC at least, it is possible to find  $[V_1 - V_3 - V_2]$ , as in (2.47a). Then, PI would take such structures as its input, invert  $V_1$  across  $V_3$ , and give the correct output in (2.47b).

- (2.47) (a) *Petar je svirao bio čelo.*  
                $V_1$   $V_3$   $V_2$   
           Peter-nom is-cl played been cello-acc  
           ‘Peter had played the cello.’
- (b) *Svirao je bio čelo.*  
            $V_3$   $V_1$   $V_2$   
           played is-cl been cello-acc  
           ‘He had played the cello.’

Notice that PI analysis sees LVM as a Last Resort operation. This means that it is triggered only if, and when, clitic auxiliaries are stranded in initial position. Sentence initial placement would violate the second position constraint. To prevent that from happening, the auxiliary is moved to the right, across the non-finite verb. As we shall



see shortly, the Last Resort view of LVM is not related only to phonological accounts, but also assumed in strong syntactic approaches to cliticisation.

In conclusion, we may note that PI analysis of LVM fares quite well. It successfully accounts for a range of blocking effects (modulo the blocking effect exerted by the question particle *li*). The potential problem for PI, however, is that it cannot deal with the absence of blocking effects by low elements i.e. those which intervene between the auxiliary and the participle. Such elements are predicted to block LVM, seemingly contrary to the data.

### 2.6 Syntactic accounts of clitic placement

The main characteristic of strong syntactic analyses is the assumption that clitics are always found in the same structural position (Ćavar 1999, Progovac 1996, 2000, Rivero 1997, Tomić 1996, 1997, Wilder and Ćavar 1993, 1994, etc). The role of phonology is reduced to the minimum. At best, it acts as a filter, ruling out only those structures where clitics are stranded in initial position. All patterns are derived syntactically, either by movement, or by base generation of lexical material merged into a preclitic position.

The position most commonly assumed to be the syntactic site of cliticisation is  $C^0$ . Clitics, both pronominal and auxiliary, are merged in their base positions, and by the application of syntactic movement brought to the head of the C node, to which they right adjoin.  $C^0$  may be empty, or filled by a complementizer. Note that while auxiliary clitics may be featurally associated with  $C^0$  through their tense features, it is much less clear how to motivate the raising of pronominal clitics.

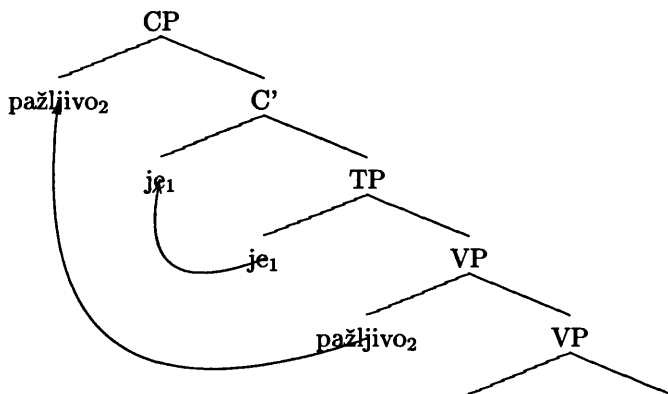
Spec-CP is targeted by various movement processes (topicalisation, wh-fronting, etc.), while  $C^0$  may host the directly inserted complementizer, or a moved head. The fronting of the pre-clitic material is by and large unconnected to cliticisation, inde-

## 2. LVM and the syntax of clitic auxiliaries

pendently motivated by the presence of Top features, wh-features, etc.<sup>15</sup> Consider, for instance, how (2.48) would be derived (cf. fig. 2.3). Here, the adverb precedes the auxiliary clitic, meaning that (i) the clitic has to move from T<sup>0</sup> and adjoin to the empty complementizer node, and (ii) the adverb topicalises to the Spec-CP.

- (2.48) *Pažljivo je gledao film.*  
           carefully is-cl watched film  
           ‘Peter watched the film carefully.’

(Fig. 2.3)



Prima facie, such a system could give rise to illegitimate clitic orders. For instance, multiple fronting to the specifier position of CP, or the insertion of the complementizer plus movement to Spec-CP, could result in the cluster being pushed into a position lower than the second one. Alternatively, Spec-CP could be phonologically unrealised, resulting in clitic initial structures. Those patterns are, as we have seen,

<sup>15</sup>However, this position is weakened and modified for LVM data. The verb is commonly claimed to front in order to satisfy the needs of the cluster i.e. provide a phonological host for the clitics which would otherwise be left stranded in the initial position.

## 2. LVM and the syntax of clitic auxiliaries

ungrammatical unless the conditions under which ‘delayed placement’ obtains are fulfilled. Clitic initial structures are precluded by relating the syntactic side of cliticisation to phonology: SC clitics are enclitics, hence they need to attach to lexical material which precedes them. In the absence of a well formed phonological host, enclitisation fails, and hence the ungrammaticality. Lower clitic placement is more difficult to rule out. In order to exclude those data it is claimed that (i) multiple CP recursion is not allowed, and (ii) the Doubly Filled COMP Filter, which stipulates that both  $C^0$  and Spec-CP cannot be simultaneously filled, holds in SC.<sup>16</sup> Therefore, the following is obtained:

- (2.49) (a)  $[_{CP} [_{C^0} [_{C^0} X] CL] \dots] \checkmark$   
 (b)  $[_{CP} XP [_{C^0} [_{C^0} ] CL] \dots] \checkmark$   
 (c)  $*[_{CP} [_{C^0} [_{C^0} ] CL] \dots] *$  by phonology  
 (d)  $*[_{CP} XP [_{C^0} [_{C^0} X] CL] \dots] *$  by Doubly Filled COMP Filter

There is a consensus that strong syntactic analyses of P2 have an advantage over phonological analyses since they correctly predict the possible hosts of the clitic cluster. The fundamental claim is that only those constituents that can be syntactically extracted (or base generated in Spec-CP) can come to precede the clitic cluster. Recall the data from section 5 of this chapter, where I gave two examples of patterns predicted to be grammatical under the PI analysis, but which, in fact, are out due to syntactic constraints. They involve clitics following prosodically strong prepositions,

<sup>16</sup>The Doubly Filled COMP Filter, is generally considered an ‘abominable stipulation’. However, it may well be a particular instance of a generalised *Doubly Filled Nothing Filter* (Starke 2001). Starke argues that there is no positive evidence that any node may have its head position and its Spec lexically realised at the same time. For him this is due to the nonexistence of positions postulated by X-bar theory. He in fact argues that all projections make available only one slot, filled either by an  $X^0$  or an XP. If he is right, and if grammar does not make available more than one position, then the impossibility of (2.49d) is expected. Note, however, this still would not preclude lower clitic placement, since in principle, several positions could be projected above the position of the cluster.

## 2. LVM and the syntax of clitic auxiliaries

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and clitics separating the noun from its complement. The syntactic analyses get these facts right, as it can be shown that extraction in those contexts is impossible.

This is not to say that a syntactic analysis is clear for all cases of split constituents. There is a small residue of data which appear to be problematic, but some of which, ultimately, can be given a syntactic account. They include split PPs (modulo a small set of problematic cases like (2.35) as given in section 4.3), as well as certain other split phrases, such as proper names and co-ordinate phrases.<sup>17</sup>

Even though we may grant that there is an intimate link between clitic positioning and the possibility of syntactic extraction, hoping that residual problems may get an adequate solution, strong syntactic analyses cannot very easily deal with delayed clitic placement. The main problem is that clitics are claimed to always occupy the same position. This means that constituents preceding and following the cluster have to move around it. Moreover, given all the assumptions, they have to be placed either in  $C^0$  or Spec-CP. While for some cases these ideas may be made plausible, other patterns are not easily dealt with. For instance, if a clitic follows an adverb as in (2.50a) and precedes it as in (2.50b), it has to be argued that the adverb in the (a) example is moved to Spec-CP. The positioning of adverbs in SC is fairly free, and there is no reason why adverbs cannot be topicalised, so the examples as (2.50) are not very problematic.

- (2.50) (a) *Vjerovatno ga je vidjeo.*  
probably him-cl.acc is-cl seen  
'He has probably seen him.'

- (b) *Ivan ga je vjerovatno vidjeo.*  
Ivan-nom him-cl.acc is-cl seen  
'Ivan has probably seen him.'

However, consider further delayed placement data. Parentheticals can influence

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<sup>17</sup> SC allows clitic to intervene between two portions of proper names, as for example in *Leo* cl *Tolstoy*. Bošković 2001 shows that proper names are not islands to extraction, and that therefore, these placements are amenable to syntactic analysis.

## 2. LVM and the syntax of clitic auxiliaries

the placement of clitics, as we have already seen. Clitics are unable to stand after a pause, but given the presence of a pause as in (2.51), they can be placed either after the subject of the embedded clause as in (2.51a), or after the complementizer as in (2.51b).

- (2.51) (a) *Mislim da # kao što smo već rekli #*  
think-I that as are-cl already said

*Ivan će svirati na sutrašnjem koncertu.*  
Ivan-nom will-cl.3sg play-inf on tomorrow's concert  
'I think, as we have already said, that Ivan will play in tomorrow's concert.'

- (b) *Mislim da će # kao što smo već rekli #*  
think-I that will-cl.3sg as are-cl already said

*Ivan svirati na sutrašnjem koncertu.*  
Ivan-nom play-inf on tomorrow's concert.

In strong syntactic analyses, the syntactic structures of the two examples have to be different. However, it is difficult to see that the complementizer in (2.51a) is not in  $C^0$ , while in (2.51b) it is.

Additionally, delayed placement induced by heavy constituents creates further problems. Contrast the two examples already given as (2.28) and (2.31), but repeated here as (2.52 a and b). Given that clitics are in  $C^0$  by assumption, and that the Doubly Filled COMP Filter holds, it follows that the subject DP in the (a) example is outside the domain of C, while it is in Spec-CP in the (b) example. It is difficult to defend such a position. Schütze (1994), for example, assumes that syntax is sensitive to phonological weight, so that when a heavy constituent is found in Spec-CP, and detected as such by syntax, it is moved outside the domain of CP, and adjoined to it. Clearly, this proposal assumes that syntax is sensitive to phonological features of constituents, an assumption most probably undesirable.

## 2. LVM and the syntax of clitic auxiliaries

(2.52) (a) *Moj najbolji prijatelj, otišao je u Indiju.*  
my-nom best-nom friend-nom gone is-cl to India  
'My best friend has gone to India.'

(b) *Moj najbolji prijatelj je otišao u Indiju.*  
my-nom best-nom friend-nom is-cl gone to India  
'My best friend has gone to India.'

### 2.6.1 LVM as Participle-to-C

LVM data (albeit only over Type 1 auxiliaries) show that clitics have to end up following, and being adjacent to the moved verb in LVM constructions. Clearly, then, the position of the clitics is a pointer to the position of the fronted verb (at least in those accounts where morpho-phonological operations do not reorder the [host-clitic] string). Thus, syntactic accounts of cliticisation make a strong prediction on the landing site of the raised participle. If the syntactic host of the clitics in SC is  $C^0$ , it follows that the participle cannot occupy a position lower than the cliticisation site. Moreover, given the model of P2 outlined above, together with the claim that LVM is head movement, it follows that the participle must be adjoined to  $C^0$ .

Several properties of LVM constructions are cited as additional support for this hypothesis (see in particular Rivero 1991, 2000, 2001), namely, the facts that participle fronting over clitic auxiliaries targets sentence initial position, and that it is restricted to root contexts. The relevant data are repeated here (2.53a and b).

(2.53) (a) *\*Petrovo vozio<sub>1</sub> je t<sub>1</sub> biciklo.*  
Peter's driven is-cl bicycle-acc  
'He rode Peter's bicycle.'

(b) *\*Ne vjerujem da slušao<sub>1</sub> je t<sub>1</sub> Gergijeva.*  
not believe-1sg.pres that listened is-cl Gergiev-acc  
'I do not believe that he listened to Gergiev.'

Now, if LVM targets  $C^0$ , and if CP is the highest projection of the clause, then these assumptions, compounded by the Doubly Filled COMP Filter, give the initial

## 2. LVM and the syntax of clitic auxiliaries

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placement facts. On the other hand, if  $C^0$  is the landing site of the LVM-moved verb, then the complementizer blocks its application by occupying the structural position which is the landing site of the fronted participle. As argued by Rizzi and Roberts (1989), movement of the participle into  $C^0$  would disrupt selection of the  $C^0$  by the higher verb, and hence, LVM cannot take place.<sup>18 19</sup>

Bošković(1995) argues against LVM in  $C^0$  on the basis of the following data. The argument rests on the impossibility of the participle fronting over higher elements, i.e. the question particle *li* and sentential adverbs (chapter 1, section 7). The logic of the argument is as follows: if the participle lands in  $C^0$ , LVM should be possible across the elements projected below this position. In particular, sentential adverbs

<sup>18</sup>Embedded LVM is, as a rule, quite restricted crosslinguistically, being possible only in a small set of environments. Old Spanish, according to Lema and Rivero (1991) exhibited participle fronting in the complement of 'bridge' verbs, which, they argue, allow CP recursion. CP recursion provides several  $C^0$  positions ( $C_2$  and  $C_1$ , where  $C_2$  is higher than  $C_1$ ). In such constructions, the participle can move to  $C_1$  without disrupting the selectional relation between the matrix verb and its clausal complement, and hence embedded LVM can obtain. However, there are several problems with this account. Firstly, CP recursion does not always imply embedded LVM, as for instance in Breton where LVM is blocked in these constructions (Schafer 1997). Secondly, the possibility of participle fronting in non-root contexts sometimes depends on the type of the auxiliary over which the participle raises, as is the case in SC (cf. chapter 1, section 5). In SC non-clitic auxiliaries allow embedded LVM, while clitics disallow it completely, the fact most naturally related to the effects of the second position constraint.

<sup>19</sup>In fact, the arguments do not quite go through at least for SC. The reason is that LVM in the context of strong syntactic analyses of cliticisation is often seen as a Last Resort mechanism, being triggered by phonological properties of clitics, and applying only if nothing else is fronted (or merged) within the domain of C. I shall discuss the Last Resort view of LVM in more detail in the next subsection, but for now, notice that both of its properties can be explained away if participle fronting is triggered under such conditions, regardless of its syntactic placement. For instance, suppose LVM places the participle in  $T^0$ . Suppose further that AgrSP and CP can be projected above TP. If LVM is constrained to apply as a Last Resort operation, then it follows that it will take place only when CP, AgrSP and Spec-TP do not contain any phonological material. If they did, LVM would be blocked. Therefore, it follows that LVM will always result in sentence initial placement, and that it will be blocked in embedded contexts.

## 2. LVM and the syntax of clitic auxiliaries

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are adjoined to TP, and hence should be possible in LVM contexts. Equally, given that *li* is a member of the clitic cluster (which we may hold independently to be placed in C<sup>0</sup>), it should be possible for the LVM-fronted non-finite verb to precede it. Neither of these predicted patterns are possible, and hence the C<sup>0</sup> analysis is not true.

- (2.54) (a) *\*Istukao je nesumnjivo Igora.*  
Beaten is-cl undoubtedly Igor-acc.  
'He has undoubtedly beaten up Igor.'
- (b) *\*Volio li si igrati šaha?*  
liked Q are-cl play-inf chess  
'Did you like playing chess?'

While the impossibility of LVM across *li* might be accounted for by appealing to syntactic constraints which require a tensed element to precede it, the argument pertaining to the impossibility of LVM across sentential adverbs is more difficult to account for under 'the participle in C<sup>0</sup>' view. Under this analysis, there are no entirely clear reasons why this should obtain, given that in languages where the verb moves to a high position, it can cross over sentential adverbs without any ill effects, as for instance, in a V2 language such as Dutch (P. Ackema p.c.).

However, in SC not only participles, but also finite verbs, negative auxiliaries and non-clitic auxiliaries are unable to precede sentential adverbs. The only verbal elements which can be found higher than them are clitic auxiliaries. Consider the following paradigm.

- (2.55) (a) *Petar je vjerovatno svirao čelo.*  
Peter-nom is-cl probably played cello  
'Peter probably played the cello.'
- (b) *\*Petar svira vjerovatno čelo.*  
Peter plays probably cello  
'Peter probably plays the cello.'



## 2. LVM and the syntax of clitic auxiliaries

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- (c) \**Peter nije vjerovatno svirao čelo.*  
Peter-nom not-is probably played cello  
'Peter probably did not play the cello.'

- (d) \**Petar bješe vjerovatno svirao čelo.*  
Peter-nom was probably played cello  
'Peter probably had played the cello.'

We see that verbs other than clitic auxiliaries do not move higher than sentential adverbs. Bošković's arguments would be severely weakened if one could find the environment, where on the basis of independent evidence, one could claim that verbs move to C<sup>0</sup>. Then, if this movement is blocked in the presence of sentential adverbs, we would have some evidence that they, in ways not quite clear, block this movement. We know that finite verbs move to this position in *yes/no* questions, so this is a potential testing ground. Indeed, finite verbs cannot move over them, but, in fact, crosslinguistically, questions do not tolerate sentential adverbs.<sup>20</sup> Compare SC and English examples below:

- (2.56) \**Svira li vjerovatno čelo.*  
plays Q probably cello  
'Is it the case that he probably plays the cello.'

- (2.57) \*Did he probably play the cello?

Howard Gregory (p.c.) pointed out to me that sentential adverbs are in fact possible in questions in echoic contexts. For instance, in the following context (2.56) would be possible. Imagine a situation such that John is in court, giving evidence at a theft inquiry. He has to give a witness statement and starts recounting what happened. He thinks that he had heard the crime victim peacefully playing the cello, while the robbers tried to get in, but he is not quite sure. So he says (2.58):

<sup>20</sup>In fact, this is not quite correct. As pointed out to me by Ian Roberts and Andewe Simpson, this does may hold of modal adverbs, but not other sentential adverbs like *carefully*, *deliberately*, etc.

(2.58) He probably played the cello.

To this, the judge can legitimately ask (2.57), stressing the adverb, and questioning John's certainty of the event. If we apply the same test to SC, then finite verbs can be fronted over sentential adverbs. Hence, (2.56) is well formed in this context. Moreover, the same can be done with LVM constructions. Since they are not syntactically associated with questions, a sentence would have to be pronounced with interrogative intonation to give it the required meaning. In any case, LVM over sentential adverbs becomes possible. Whether this could provide a potential counter-argument to Bošković is not clear.

### 2.7 Last Resort and triggers for LVM

The syntactic analyses of cliticisation, as a rule, are complemented by the Last Resort view of LVM. The essential idea is that the failure of topicalisation, wh-movement, or some such process which provides clitics with a host, creates environments where the clitics are stranded in initial position. Given the enclitic nature of SC auxiliaries, this would cause a PF crash, and LVM is triggered in order to save the derivation. Essentially the same position is expressed by PI analyses, but the similarities do not go much further. PI has to refer to the elements which *follow* the clitic cluster, so that clitics have to attach to the *first* available host. The Last Resort view associated with syntactic analyses of cliticisation, on the other hand, does not include such locality considerations. There is nothing in its formulation such that the movement triggered in clitic-first outputs of syntax has to involve the closest constituent with a potential to satisfy the needs of the cluster.

For instance, sentences where the sentential adverbs are present have a simplified structure such that clitics are in  $C^0$ , the projection of the adverb is below this position, the projection occupied by the participle is still lower. By PI clitics would have to attach to the adverb, but by the understanding of Last Resort under discussion, no

## 2. LVM and the syntax of clitic auxiliaries

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such requirement is in place. Here, participle fronting can still be triggered, across the sentential adverb and the clitic.

Particular works differ in how the idea of Last Resort is implemented. Progovac (1996) is of the opinion that the trigger for LVM in these contexts is the phonological side of cliticisation. Under this view, LVM is a syntactic movement targeting  $C^0$ , but triggered by phonological features. Therefore, syntactic movement has to take place in order to satisfy the constraints imposed on the level of PF representation. Syntax, then, has to involve Look Ahead and the derivations have to be constrained by considerations of global economy. This proposal has been criticised on such grounds (see Bošković 2001, Franks 1998, Franks and King 2000, etc.)

An alternative implementation can be found in Wilder and Ćavar (1993, 1994). The idea is different to the extent that apart from phonological properties of the cluster which have to be satisfied at PF, LVM is additionally triggered by the weak [+AUX] feature on the participle, which requires checking within the local domain of the auxiliary, hence head to head adjunction takes place. This feature is weak, and ordinarily checked only at LF. However, in clitic initial structures, the movement of the participle is triggered early, due to the phonological requirements of cliticisation. Syntactic derivation still involves Look Ahead, but unlike in Progovac's view where no checking relation is established between the participle and the auxiliary, here LVM leads to establishing such a relation.

Yet another different model is proposed by Rivero (2001).<sup>21</sup> On this view, LVM is triggered by phonological requirements of the clitic (the impossibility of initial placement), but this requirement, itself, is defined on syntactic structures. The idea is that for a clitic auxiliary to be licensed, it has to be an immediate complement of  $C^0$ .  $C^0$ , in turn, has to conform to well-formedness conditions which require that either its specifier, or its head position be filled. LVM is triggered on the PF branch of computation, raising the verb to  $C^0$ , not in order to satisfy some formal features,

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<sup>21</sup>See also Rivero (2000).

but in order to satisfy the (phonological) licensing of clitic auxiliaries.

## 2.8 SC clitics and variable pronunciation of traces

SC clitics may surface in different positions relative to some element X, such that X precedes the clitic ([X – CL]) or the clitic precedes X ([CL – X]) (2.59 = 2.50).

(2.59) (a) *Vjerovatno ga je vidjeo.*  
 probably him-cl.acc is-cl seen  
 ‘He has probably seen him.’

(b) *Ivan ga je vjerovatno vidjeo.*  
 Ivan-nom him-cl.acc is-cl probably seen  
 ‘Ivan has probably seen him.’

Under the standard view by which syntactic constituents are pronounced in the highest positions of the chain, data of this sort force the conclusion that syntactic constituents (either the clitic, or the adverb above) are not always in some designated projection. We have seen that data of this kind may pose quite serious problems for strong syntactic analyses of SC cliticisation by which the clitic cluster is always in the same position. As noted, (2.59) itself is not very problematic, but the data involving parentheticals and heavy constituents are. They seem to force the conclusion that clitics are not always associated with one and the same functional projection.

However, coupled with certain theoretical assumptions, the variable surface placement may be understood as an issue properly pertaining only to the spell out position of constituents, and therefore, only indirectly to their syntactic positioning. For instance, it has been proposed in the context of the copy theory of movement (Chomsky 1995), that spell out operations need not always realise the highest position (the head of) the chain. This point has been argued by a series of authors (Bobaljik 1995, Bošković 2001, Bošković and Franks 2001, Franks 1998, Pesetsky 1997a, 1997b, Roberts 1997, etc), so that we may consider the arguments for this view quite well known and need not go into the issue any further.

## 2. LVM and the syntax of clitic auxiliaries

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There are several accounts of SC cliticisation, which seem *empirically* most adequate, and which exploit this possibility (Franks 1998, Bošković 2001). The heart of such proposals is that PF requirements determine which copy of the clitic is realised. Syntax determines the set of possible spell out positions, by constraining clitic movement, and therefore the distribution of their traces (copies). Phonological constraints which determine spell out positions may be formulated differently. The weakest position would be that phonology forces the spell out of a lower copy only when clitics are found next to a pause, while the fact that only one constituent precedes the cluster is due to the way syntactic representations are constrained. For instance, if the highest copy of the clitic is spelled out by default (unless it stands next to the prosodic boundary), and if syntax does not make available more than one structural position higher than it, then essentially, P2 is very strongly a syntactic phenomenon. However, P2 may be due to a more elaborate PF filter, which not only bans the clitic when it is adjacent to a pause, but which also constrains it to be in the second position with a reference to a prosodic boundary. In fact, the last position is taken in Bošković (ibid.). He formulates it in terms of a filter which states:

(2.60) (a) suffix

(b) # cl – where # is a prosodic boundary

Bošković (2001:83)

The first clause of (2.60) requires that clitic be suffixed onto some lexical material, capturing the enclitic status of P2 elements in SC. The second clause of (2.60) additionally states that clitics have to be positioned next to a prosodic boundary. Notice that the relevant prosodic constituent is an Intonational Phrase. These two requirements are in conflict: one forces the clitic to be in the initial position (the clause (b) above) where it cannot persist due to the effect of the (a) clause. This conflict is resolved through second position placement.

## 2. LVM and the syntax of clitic auxiliaries

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Bošković assumes that clitics, be they auxiliary or pronominal elements, are merged in low positions: in AuxP which takes VP as its complement, and as complements to the verb, respectively. Then they move through a series of positions, ultimately reaching those which are syntactic sites of cliticisation. The position auxiliary clitics come to occupy is the head position of AgrSP, while pronominals are associated with agreement object projections (agreement direct object for accusative clitics, and agreement indirect object for dative clitics). All traces left by their movement can be potentially realised at PF. Which copy will be pronounced is determined by the PF filter above (2.60).

Consider, for instance, the derivation of (2.59a and b). In (2.59b) the clitic follows the subject, while in (2.59a) it follows a sentential adverb (which Bošković assumes is adjoined to TP). In syntactic representation, the clitic *je* is simultaneously present in AuxP, AgrOP, TP and AgrSP (and all other functional projections within the domain of I, since it raises stepwise from its base position within AuxP). Now, at PF, the output of the syntactic component is subject to the PF filter. Consequently, when PF detects an overt subject, it will force clitics to surface after it. The clitic will be spelled out in AgrS<sup>0</sup>, and hence (2.59b=2.61b). However, when an overt subject is not present, PF will seek the first phonologically realised constituent (the sentential adverb in 2.59a), and force the spell out of the clitic in the position immediately after it, and hence (2.59a=2.61a).

- (2.61) (a) [<sub>AgrSP</sub> [<sub>AgrS0</sub> *je* [<sub>TP</sub> *vjerovatno* [<sub>TP</sub> [<sub>T0</sub> *je* [... [<sub>AuxP</sub> [<sub>Aux0</sub> *je* [...]]]]]]]]]]]  
 (b) [<sub>AgrSP</sub> *Ivan* [<sub>AgrS0</sub> *je* [<sub>TP</sub> [<sub>T0</sub> *je* [... [<sub>AuxP</sub> [<sub>Aux0</sub> *je* ...]]]]]]]]]

Bošković argues that there are good reasons to assume such an analysis. Consider the following data, which concern the distribution of clitic auxiliaries, in particular the split between the third person singular form *je* and all other auxiliary clitics. As noted in chapter 1, section 11, *je* follows pronominal clitics (2.62a), while all other clitic auxiliaries precede them (2.62b).

## 2. LVM and the syntax of clitic auxiliaries

(2.62) (a) *Ona mu ga je predstavila.*  
 she him-cl.dat him-cl.acc is-cl introduced  
 'She has introduced him to him.' Bošković(2001:126)

(b) *Oni su mu ga predstavili.*  
 they are-cl him-cl.dat him-cl.acc introduced  
 'They have introduced him to him.'

However, there is enough evidence that *je* is higher than pronominal clitics in syntax, even though it follows them in a linear string, and that it patterns with the rest of clitic auxiliaries. The evidence comes from certain syntactic processes (VP ellipsis, VP preposing, sentential adverb placement, parenthetical placement etc.) and strongly points to this conclusion (see Bošković (2001:54–63 and 126–31) for fuller discussion). Consider the following data concerning VP ellipsis.

(2.63) (a) *On mu ga je predstavio,*  
 he him-cl.dat him-cl.acc is-cl introduced

*a i ona je mu ga predstavila.*  
 and she is-cl him-cl.dat him-cl.acc introduced  
 'He introduced him to him, and she has done so.' Bošković (2001:126)

(b) *\*On mu ga je predstavio,*  
 he him-cl.dat him-cl.acc is-cl introduced

*a i ona mu ga je predstavila.*  
 and she him-cl.dat him-cl.acc is-cl introduced

Progovac (1998), Stjepanović (1998), and Bošković (2001) observe that *je* does not have to be deleted by VP ellipsis (2.63a). However, deleting *je* and leaving pronominal clitics behind results in sharp ungrammaticality (2.63b). The same behaviour under VP ellipsis can be observed with other clitic auxiliaries, those which precede the pronominal clitics: VP ellipsis can affect pronominals to the exclusion of auxiliaries (2.64a), but not vice versa (2.64b).

## 2. LVM and the syntax of clitic auxiliaries

- (2.64) (a) *Mi smo mu ga predstavili,*  
 we are-cl him-cl.dat him-cl.acc introduced  
  
*a i vi ste mu ga predstavili.*  
 and you are-cl him-cl.dat him-cl.acc introduced  
 'We have introduced him to him, and so have you.'
- (b) \**Mi smo mu ga predstavili,*  
 we are-cl him-cl.dat him-cl.acc introduced  
  
*a i vi ste mu ga predstavili.*  
 and you are-cl him-cl.dat him-cl.acc introduced

This parallel behaviour under VP ellipsis suggests that all auxiliary clitics occupy the same position in syntactic structure. This position has to be higher than the position of other clitic elements (bar the question/focus particle *li*) (given that auxiliaries can survive VP ellipsis, but cannot be deleted to the exclusion of pronominal clitics). While the data concerning auxiliaries other than *je* are straightforward, *je* itself represents a puzzle: on one hand it seems to be lower than pronominal clitics, while on the other there is evidence that its structural position is higher than pronominal clitics. The surface placement of *je*, together with its syntactic behaviour, can be elegantly accounted for if the position of its highest copy is distinguished from the position in which it is phonologically realised. Which copy is pronounced is determined by spell out rules, which (admittedly for reasons not quite clear), force it to follow pronominal clitics in the clitic string. The underlying representation of  $[CL_{dat} - CL_{acc} - je]$  is as given in (2.65): *je* is simultaneously present in a series of functional projections, starting from AuxP where it originates, and ending in AgrSP. At PF, the highest copy which is lower than pronominal clitics is spelled out, while the rest are deleted.

- (2.65)  $[AgrSP [AgrS je [TP [T je [AgrIOP CL_{dat} [AgrIO je [AgrDOP CL_{acc} [AgrDO je$   
 ... ]]]]]].

Under the view advanced in Bošković the considerations of P2 do not complicate syntax. In particular, sometimes poorly motivated movement of sentential con-



## 2. LVM and the syntax of clitic auxiliaries

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stituents around clitics need not be assumed, unlike in the models in which the spell out position of clitics is taken to correspond to their highest copy (cf. section 6 of this chapter). In fact, given that the last mentioned view is difficult to defend, it would seem that the position taken by Bošković (2001) and Franks (1998) is the most viable alternative. Fixed clitic placement (in the sense that the spell out position corresponds to the highest copy) implies additional complications for the syntax of SC. Clitics can be preceded by a variety of XPs, as well as  $X^0$ s, like complementizers and fronted verbs. This means that if the structural position of clitics is  $C^0$ , then Spec-CP has to accept not only topics, foci, wh-elements, but also constituents which are neither topicalised, nor focused, nor wh-moved. For instance, non-focused universal quantifiers can be placed in the pre-clitic position. Given that they are unlikely to be topics, and that they are not focused, the question, to which it is difficult to give an answer, is why they are fronted at all.

- (2.66) *Svi su ga vidjeli.*  
all-nom is-cl him-cl.acc seen  
'Everybody has seen him.'

Additionally, as already noted (section 2.2.6) given that prosodic characteristics of constituents determine the possibility of delayed clitic placement (for instance 'heavy constituents' and parentheticals) it is difficult to see how data can be analysed in a strongly syntactic analysis, without additional unwanted stipulations.

## 2.9 Conclusion

For the reasons just given, the model of SC cliticisation has to involve reference to phonological constraints in accounting for the placement of SC clitics. However, it is clear that at the same time syntax determines their distribution. Data (with a few notable exceptions which remain problematic, such as split PPs discussed in section 4.3 of this chapter) fairly strongly support the generalisation which states that

## **2. LVM and the syntax of clitic auxiliaries**

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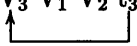
SC second position clitics can only ever occupy positions determined by syntax. For these reasons, an empirically adequate account has to involve reference to both syntax and phonology. Moreover, phonological mechanisms/constraints have to be powerful enough to allow for attested patterns, but not too powerful so as to overgenerate. I have argued in the course of this chapter that an approach along the lines of Bošković (2001) and Franks (1998) best fits the bill.

## Chapter 3

# LVM as a violation of locality

The main problem posed by LVM data concerns the X'–theoretic status of the fronted predicate. So far, the predominant answer to this question is that raised verbs are  $X^0$ s. This is suggested by several facts reviewed in chapter 1: (i) LVM involves movement of the head of the verb phrase only, (ii) it is in complementary distribution with full VP fronting so that the auxiliaries which trigger LVM cannot trigger the fronting of the full VP and vice versa, (iii) it is blocked by certain heads (i.e. negative and emphatic auxiliaries), (iv) the fronted participle and the triggering auxiliary have to be adjacent, etc. All these properties are suggestive of head chain formation. However, if this is so, then LVM has to involve a violation of the locality constraints on head movement. In particular, nonlocal LVM constructions like (3.1) seemingly cannot be derived without violation of the locality conditions constraining the application of head movement.

(3.1)  $[V_3 \ V_1 \ V_2 \ t_3 \ \dots]$



I open this chapter with some general considerations on the locality of head chains. In the second part, I discuss the so-called *long head movement* analyses of LVM (Borsley et al. 1996, Rivero 1991, 1994, 2000, 2001, Roberts 1993a, 1994, forth., etc),

### 3. LVM as a violation of locality

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which argue that under certain well defined conditions, head chains need not involve movement to the nearest c-commanding  $X^0$ . Instead, a moving head can *cross over* a series of head positions in one fell swoop. As such LVM data are taken to be a prime example of the violability of the HMC. The last part of this chapter is concerned with an analysis of LVM as proposed by Bošković (1995, 2001), the crucial feature of which is the possibility of excorporation by which LVM data are derived.

#### 3.1 The properties of head chains

The standard view in generative syntax is that both  $X^0$  and XP type displacements are subcases of Move  $\alpha$ . However, recently a number of properties that distinguish between the two have been brought into research focus, and interpreted as problems specifically for the view that head chain type relations involve syntactic movement. Thus, head movement, unlike XP movement, (i) is subject to much stricter locality conditions than phrasal movement (ii) violates the Extension Condition (Chomsky 1995), (iii) is incompatible with the (simplest) definition of c-command, (iv) does not affect the semantics of the sentence, (v) feeds affixation.<sup>1</sup> These discrepancies are often taken to indicate that head movement is intrinsically a different kind of operation than phrasal movement – perhaps not an operation of movement at all (see Brody 1997, 2000, Williams 2003, and others).

Leaving aside the locality issue for the moment, let us consider these problems in more detail, beginning with (i) and (ii). The conventional position has it that head chains are created by movement of  $X^0$  to the next c-commanding head  $Y^0$ , to which  $X^0$  adjoins. The raising operation can be repeated over an arbitrary number of nodes, so that the complex head  $[Y^0 X^0 Y^0]$  raises to  $Z^0$ , adjoins to it creating an even more complex structure  $[Z^0 [Y^0 X^0 Y^0] Z^0]$ , which, in turn, can further move to

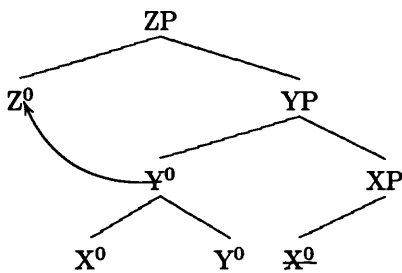
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<sup>1</sup>Note that the generalisations expressed in (i) – (v) are not unproblematic. For critical evaluations see for instance Carnie (2000), Matushansky (n.d.), Zwart (2001).

### 3. LVM as a violation of locality

$W^0$ , adjoin to it, and so forth. Such an application of  $X^0$  movement creates structural representations as in (fig. 3.1).

(3.1)



Consider the structure  $[_{Y^0} X^0 Y^0]$ , and in particular the c-command relation between the moved head  $X^0$  and its trace. Under the simplest version of c-command by which c-command relations are computed in terms of the first branching node dominating the antecedent of the trace, c-command between  $X^0$  and the trace of  $X^0$  cannot be established. The first branching node dominating the moved head is  $Y^0$ , but, crucially,  $Y^0$  does not dominate the trace of the moved head. Therefore, the c-command relation between the antecedent  $X^0$  and its trace fails.

The c-command problem and the violation of the Extension Condition are related issues concerning derivational/representational requirements on movement. The Extension Condition derives the c-command requirement by restricting all applications of Merge so as to apply at the root of the tree. However, in applications of head movement the higher head can never be at the root of the tree at the moment when the lower head adjoins to it. Take the derivation of  $[_{Y^0} X^0 Y^0]$  again.  $X^0$  is extracted from the complement of  $Y^0$ . So, at the point when the raising of  $X^0$  takes place,  $Y^0$  has already merged with the projection of the moving head (i.e. XP in (fig. 3.1) above). This means, in effect, that there is at least one node (i.e.  $Y^0$ ) which dominates

### 3. LVM as a violation of locality

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the higher head  $Y^0$ .  $Y'$  is the root of the tree, and it is  $Y'$  which by the Extension Condition should be re-merged with the moving head. There has been a whole array of proposals which in one way or another seek to modify the structure of head chains and thereby resolve these two problems. To mention just a few, the moved head is placed in a Spec position (Matushansky n.d., Roberts), head movement is reduced to phrasal remnant movement (Koopman and Szabolsci 2000, Mahajan 2000), or the moved head is allowed to project (Bury 2003, Fanselow 2003, Koenenman 2000).

Consider next the problem in (iv). There is no conclusive evidence that  $X^0$  displacements have effects on the semantics of the sentence. The well studied examples of verb movement (V-to-I, V-to-C) are known to be semantically vacuous.<sup>2</sup>

Even though the lack of semantic effects may not be very problematic for non-quantificational heads, more worryingly there is no solid evidence that displaced quantificational heads show anything but obligatory reconstruction. While at LF XP chains need not be interpreted in their root positions, head chains seemingly have to be. For example, while phrasal wh-movement may lead to scopal ambiguity as in (3.2), with the universal quantifier having wide or narrow scope with respect to the object WhP, in (3.3) the raised modal cannot scope over the negation.<sup>3</sup>

(3.2) Who<sub>1</sub> did everyone love t<sub>1</sub>?

(3.3) John can't t take his medication yet.

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<sup>2</sup>Note that in models of grammar such as Chomsky (1995) head movement contributes to the semantics of the sentence indirectly through the elimination of uninterpretable features. This operation is crucial for satisfaction of the Full Interpretation condition at LF. Therefore, as noted by Zwart (2001) this raises additional questions for the visibility of head movement at LF for such models of grammar.

<sup>3</sup>It has to be said that there is a small set of data which may be taken to indicate that head movement may have semantic effects after all. For instance, in the following yes/no question I-to-C movement seemingly inverts the relative scope of negation: *Shouldn't John take his medication?* Such cases can be handled by postulating an additional (higher) position in which negation can be merged. For a proposal along these lines see Cormack and Smith (2000).

*not* > *possible*

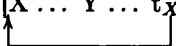
*\*possible* > *not*

Apart from these considerations,  $X^0$  and XP chains differ in the locality requirements imposed on them. This is the issue I turn to next.

## 3.2 Head movement and locality

It seems that head movement type displacements are highly local, in fact much more so than any type of XP movement. There are two senses in which the locality of head movement must be discussed. In one sense,  $X^0$  movement is local by not leaving the domain of its clause (i.e. the domain of its extended projection). In another sense, the locality of head movement defines the positions across which head chains can be constructed, and restricts them to the closest c-commanding head position, as stated by the HMC (3.4).

(3.4)  $*[X \dots Y \dots t_X]$



The locality of head chains in the first sense, i.e. their restriction to the domain of their extended projection, is well documented. For instance, a moving verb may span the functional projections of its V, I and C domains, but it cannot move into the domain of a higher verb. Or, for that matter, a verb does not move into the domain of, for instance, its subject DP.<sup>4</sup> Within its extended projection the verb is

<sup>4</sup>However, there is a set of alleged violations to the statement just made. For instance, verbal heads are argued to leave their clausal domain in the so-called restructuring environments (Evers 1975, Kayne 1989, 1991, Rizzi 1982, Roberts 1993b, 1997, Terzi 1996, etc.). Likewise, Noun Incorporation, under a syntactic analysis, involves the movement of  $N^0$  out of its extended projection and its adjunction to  $V^0$  (Baker 1988). However, restructuring, as well as Noun Incorporation have alternative explanations. Restructuring has been variously argued to involve base generation of VPs, a structure deletion process, or remnant movement into the higher clause. (see Wurmbrand 2001 and references cited therein). As for Noun Incorporation, it is questionable whether noun incorporation

### 3. LVM as a violation of locality

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forced to move stepwise as given by the HMC. It is worth noting that the restriction of  $X^0$  displacement to the domain of its extended projection does not follow from the HMC. In principle, if the relevant structural restriction as defined by the HMC is respected, the head  $X^0$  can move through the peripheral positions of the clause in which it originates, and find its way to the higher clause. In fact, movement of the  $X^0$ , if only constrained by the HMC, can in principle be unbounded.

Contrasting the locality properties of XP movement with those of  $X^0$  movement one may observe a series of differences. XP displacements are not necessarily restricted to the clause in which the XP originates (although there is a set of XP displacements which are clause bound). Moreover, while the movement of the head through its extended projection is restricted by locality to take place via every  $X^0$  position between its base generated position and its ultimate landing site, the movement of phrasal categories is arguably restricted by an *Anti-locality Hypothesis* in the sense of Grohmann (2000, 2003). Consider the following examples:

(3.5) \*John<sub>1</sub> likes t<sub>1</sub>.

(3.6) \*Him softly kissed her.

(3.7) \*Who, Mary detests?

All the examples above are ungrammatical. (3.5) shows the impossibility of XP movement from one theta position to another, (3.6) illustrates the ban on movement from one case position to another, while (3.7) is ungrammatical due to the movement from one operator position to another. What all these impossible structures have in common is that they involve a head movement chain between the incorporated noun and head of the object. It may be a different type of relation between two base generated heads i.e. the incorporated noun and an empty head in the object position (cf. Rosen 1990). It has been noted that, under the minimalist view on movement outlined in the main text, it is unlikely that noun incorporation involves movement, as it is unclear that a relation of feature checking is established between an incorporated noun and its host verb. Hence, such movement would not be triggered (cf. Ackema 1999, Den Dikken 2003).



### 3. LVM as a violation of locality

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common is the fact that XPs do not have the option of moving within a too local domain. In other words, there is a *lower* bound on the distance within which XPs can be displaced. No such anti-locality restrictions exist in relation to head movement.

Consider (3.5) to (3.6) in more detail.<sup>5</sup> (3.5) should be understood to mean *John likes himself*. In fact, such an interpretation would be possible if the hypothetical derivation in (3.8) were admissible. Imagine that the theme argument *John* raises to the position of the agent, prior to leaving the domain of the lexical verb. (*John* has to raise further through the agreement domain, but we can disregard that for now.) In that case the DP *John* could be assigned both agent and theme  $\theta$ -roles, and the sentence could come to mean that *John likes himself*.

(3.8) \*[<sub>VP</sub> John v [<sub>VP</sub> likes ~~John~~]]

In standard understanding, the prohibition against movement from one theta position to another is excluded by the Theta Criterion. The Theta Criterion requires that each and every argument be assigned exactly one  $\theta$ -role. In (3.5), the DP *John* receives two  $\theta$ -roles, and thereby the structure (3.8) is ruled out.<sup>6</sup>

Consider furthermore the impossible (3.6) which involves successive movement through the agreement domain of the clause. It could be derived if the external argument of the verb were to raise from Spec-vP first to the Spec-AgrOP position where it receives (checks) accusative case, and then to Spec-AgrSP where it receives nominative case (3.9). However, (3.6) is out, which in standard terms is understood as a violation of the Case Filter, by which all arguments must bear case, but cannot bear more than one.

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<sup>5</sup>All the examples, as well as the related discussion, are taken from Grohman (2000).

<sup>6</sup>In fact the Theta Criterion has a number of exceptions. An argument may receive more than one theta-role if these come from two different predicates, as in structures with a depictive like *John ate the meat raw*, where *the meat* receives a theta-role from both *eat* and *raw* (cf. Williams 1994, Neeleman and Van de Koot 2002). In fact multiple theta role assignment is possible just as long as the theta roles do not come from the same predicate.

### 3. LVM as a violation of locality

(3.9) [<sub>TP</sub> him<sub>1</sub> [<sub>Agro</sub> t<sub>1</sub> [<sub>AdvP</sub> softly [<sub>vP</sub> t<sub>1</sub> [<sub>VP</sub> kissed her]]]]]

Finally, we may also observe the same anti-locality restriction for phrasal movement through the domain of C. (3.10) should be interpreted as if the *wh*-phrase has raised to Spec-WhP, and from there to Spec-TopP (as illustrated in (3.11)). Such structures are ungrammatical. It has been suggested that the impossibility of successive WhP movement through the sentential domain of C may be due to the ‘operator criteria’ (Wh-Criterion, Focus Criterion, etc). These constraints force operators to stand in a Spec-head relation with the phrase bearing the relevant features.

(3.10) \*Who, Mary detests?

(3.11) \* [<sub>TopP</sub> who Top [<sub>FocP</sub> ~~who~~ Foc [<sub>TP</sub> Mary detests ... ~~who~~]]]

While all the ungrammatical examples can be ruled out by separate constraints, Grohmann (2000) argues that the data can be captured more simply and elegantly by one general statement, the so-called *Anti-locality Hypothesis*. This statement refers to sentential domains (termed *prolific domains* by Grohmann (ibid.), namely the ‘V’ domain (or the domain of theta-role assignment), the domain of ‘I’ (or agreement), and the domain of ‘C’ (or the domain of discourse information). It states that successive movement of an XP through a sentential domain is prohibited.<sup>7</sup>

(3.12) ANTI-LOCALITY HYPOTHESIS

Movement must not be too local. (Grohmann 2003:11)

where "local" means movement within one domain (CP-domain, IP-domain, VP-domain), and their equivalents in other extended projections.

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<sup>7</sup>I have simplified the generalisation somewhat. Successive movement through more than one position within a single sentential domain is allowed, but only when a ‘second’ copy has a different PF matrix. However, this need not concern us here.

### 3. LVM as a violation of locality

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The Anti-locality hypothesis states that there is a lower bound on the locality of XP movement. Such restrictions are not observed with  $X^0$  type displacement. In fact, as already noted,  $X^0$  movement, at least in typical cases, is forced to cross the shortest distance possible by the HMC.

#### 3.2.1 Formal expressions of the HMC

The locality constraints imposed on  $X^0$  chains in both senses are quite unlike the locality restrictions of XP chains. The latter can be constructed over arbitrarily large distances, and need not always target the first c-commanding head position. As I will now discuss, the asymmetry between the two is built into the wider theoretical principles defining locality conditions, namely *Relativised Minimality* (RM) (Rizzi 1990) and the *Minimal Link Condition* (MLC) (Chomsky 1995). The HMC is an informal description which arises out of RM and MLC, restricted to refer only to  $X^0$  chains.

**Relativised Minimality:** RM is related to the *Empty Category Principle* (ECP), which determines the distribution of all non-pronominal empty categories (and therefore of traces), and as such regulates the locality conditions on movement. By Rizzi's version of the ECP non-referential traces have to be (i) head governed, and (ii) antecedent governed (or theta governed) The first clause expresses formal conditions on the licensing of traces.

#### (3.13) PROPER HEAD GOVERNMENT (Rizzi 1990)

X properly head governs Y iff:

- (i) X is a lexical head, T or Agr,
- (ii) X c-commands Y,
- (iii) no barrier intervenes
- (iv) Relativised Minimality is respected

### 3. LVM as a violation of locality

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The second clause of the ECP is an interpretative condition. For antecedent government to succeed RM has to be taken into account, where it defines what a potential antecedent governor of the trace is. Formally, we can define antecedent government as in (3.14).

#### (3.14) ANTECEDENT GOVERNMENT

X antecedent governs Y if there is no Z such that:

- (i) Z c-commands Y, but Z does not c-command X,
- (ii) Z is a typical potential antecedent governor of Y

RM itself is defined as follows.

#### (3.15) RELATIVISED MINIMALITY

Z is a potential antecedent governor of Y if:

- (i) In an A'-chain, Z is an XP in A'-position c-commanding Y,
- (ii) In an A-chain, Z is an XP in A-position c-commanding Y,
- (iii) In X<sup>0</sup> chain, Z is an X<sup>0</sup> c-commanding Y.

Thus, XP movement is relativised so that for A'-chains only XPs occupying an A'-position act as interveners, while for A-chains, only XPs in A-positions block the movement. No such distinction is observable in the creation of head chains where all that matters is the X'-theoretic status of the potentially intervening element.<sup>8</sup>

**Minimal Link Condition:** The Minimal Link Condition (MLC) (Chomsky 1995) expresses essentially the same insight as RM, albeit in a somewhat different way. It is based on the view that movement is triggered by a head with a set of features which have to be checked by an element within its c-command domain. The

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<sup>8</sup>However, see Li (1990) and Roberts (1993a, 1994, forth) for a different view, as well as the later sections of this chapter.

### 3. LVM as a violation of locality

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attracting head triggers movement to the checking position, so that the feature checking and deletion process takes place, and the derivation satisfies the principle of Full Interpretation at LF. This states that the head can only attract the closest element with the relevant features (where 'closest' is defined in terms of c-command):

(3.16)      MLC

K attracts Y only if there is no X such that X is closer to K, and K attracts X.

(3.17)      CLOSENESS

X is closer to target K than Y if X c-commands Y.

The HMC can be made to follow from the MLC in much the same way as it can be made to follow from RM. Typically, head movement is restricted to heads within a single extended projection (something that, as noted, does not follow as such from the HMC/MLC). All heads within an extended projection are of a similar nature in that they share the same categorial features (Grimshaw 2003). So, in the strongest version of the MLC when a higher head in the extended projection attracts a lower one, all lower heads count as potential targets. If so, by the MLC the higher head must always attract the head that is closest to it.

## 3.3 Violations of the HMC

### 3.3.1 Stylistic Fronting

Both the MLC and RM allow for extensions to the system by introducing a larger number of distinct sub-systems. Just as the XP system allows for a distinction between two types of chains (A and A'), so in principle several kinds of head chains can be distinguished, such that some  $X^0$  blocks the formation of one head chain type, but does not intervene in head chains of other different types (Li 1990, Roberts 1993a,

### 3. LVM as a violation of locality

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1994, forth). In fact, as observed by Williams (2003), both RM and the MLC allow for an arbitrarily large number of different types of  $X^0$  chains. Every head in the functional projection carries different functional features, so that ultimately every head can be assigned to a different non-intervening category. The end result is a system in which nothing interferes with the displacement of anything else, and every notion of locality is lost.

The issue of course is whether such extensions are desirable, i.e. whether there is enough empirical motivation to justify them. In other words, the question is how strong the generalisation expressed by the HMC is exactly. In the literature, there is no consensus on this matter. Some authors hold that it covers the whole set of data, with the alleged violations being misanalysed instances of XP movement (Brody 1997). Sometimes, exactly the opposite is argued to be the case, as in Phillips (1996), where an  $X^0$  movement by substitution can cross over an arbitrarily large number of heads. Perhaps the most commonly held view is that the HMC holds to a large extent, but nevertheless imposes a too strict locality condition.

I will assume the strongest view of the validity of the HMC. The evidence that it can be violated, apart from the LVM cases whose proper analysis is the main issue in this thesis, does not seem very strong. Toyoshima (2001, here quoted from Matushansky n.d.) mentions Icelandic Stylistic Fronting, verb topicalisation in Mainland Scandinavian which targets the participle and satisfies the V2 requirement, and forward-copying verb topicalisation in Yiddish. Additionally, there is also the case of Hungarian Verbal Modifier Raising, where seemingly an  $X^0$  element raises unboundedly over a series of restructuring infinitives (cf. Farkas and Sadock 1988, Kiss 2003).

A process extremely reminiscent of LVM is Stylistic Fronting (SF) (Holmberg 2000, 2003, Holmberg and Platzack 1995, Hróarsdóttir 2000, Jónsson 1991, Maling 1980, Platzack 1987, Rögnvaldsson and Thráinsson 1990, etc.). SF is present in modern Icelandic and Faroese. It is a fronting process which affects several types of categories – non-finite verb and adjectival predicates, but also DPs, PPs, negation, adverbs, etc.

### 3. LVM as a violation of locality

(3.18) illustrates the fronting of the participle over the finite verb. Note the similarity with LVM. In SF constructions, the non-finite verb also has to be adjacent with the auxiliary.<sup>9</sup>

- (3.18) *Hver heldur þú að stolið hafi hjólinu?* ICELANDIC  
 who think you that stolen has the-bike  
 ‘Who do you think has stolen the bike.’

In three verb constructions, SF can prepose the lowest verb over the  $[V_1 - V_2]$  sequence (3.19a) and (3.20a). We have seen that such patterns are also possible in LVM structures (albeit only in a subset of the LVM languages). However, unlike LVM, SF does not create patterns like (3.19b) and (3.20b). In other words, local movement of the nearest verb across the auxiliary is ruled out.

- (3.19) (a)  $[V_3 - V_1 - V_2 - t_3] = (3.20a)$

- (b)  $*[V_2 - V_1 - t_2 - V_3] = (3.20b)$

- (3.20) (a) *Tekin<sub>1</sub> hefur verið t<sub>1</sub> erfið ákvörðun.*  
 taken has been difficult decision  
 ‘A difficult decision has been taken.’

- (b) *\*Verið<sub>1</sub> hefur t<sub>1</sub> tekin erfið ákvörðun.*  
 been has taken difficult decision

Other similarities between SF and LVM are that SF is also clause bound. It is incompatible with the fronting of full or remnant VPs, requiring only the head of the non-finite verb to move to the initial position. In striking similarity with LVM, it is also blocked by high elements: subjects, negation, and sentential adverbs.

SF is subject to a locality condition such that only the closest element that is eligible for SF may move. Thus, if X is closer to the target than Y, then X has to be fronted. The fronting of Y is ruled out. Interestingly, the  $X^0$  vs. XP distinction does not seem to matter.

<sup>9</sup>The examples are from Holmberg 2000, unless indicated otherwise.

### 3. LVM as a violation of locality

- (3.21) (a)  $\begin{array}{c} \text{aux X ... Y ...} \\ \uparrow \quad \downarrow \\ \text{---} \end{array}$
- (b) \*  $\begin{array}{c} \text{aux X ... Y ...} \\ \uparrow \quad \downarrow \\ \text{---} \end{array}$

Consider the contrast in (3.22b) and (3.22c).<sup>10</sup> The (a) example illustrates the base generated order where the participle precedes the predicative adjective. The fronting of the participle is possible (note that SF in Icelandic is not an obligatory process in any sense), but the fronting of the adjective is ruled out. This conforms to the generalisation stated above.

- (3.22) (a) *maðurin sem er talinn ríkur.*  
 man-the that is considered rich  
 ‘the man that is considered rich’
- (b) *maðurin sem talinn<sub>i</sub> er t<sub>i</sub> ríkur.*  
 man-the that considered is rich
- (c) \**maðurin sem ríkur<sub>i</sub> er talinn t<sub>i</sub>.*  
 man-the that rich is considered

According to the proximity of an element to the target, Maling (1980) formulated the so-called *Accessibility Hierarchy* which gives an order of priority for SF, so that the lower elements in the hierarchy cannot move over the higher ones if the higher ones are actually present. Thus, a predicative adjective cannot move over negation, past participles cannot move over predicative adjectives, and, in turn, predicative adjectives cannot move over negation. Notice however, that the Accessibility hierarchy prevents the movement of the participle across the adjective, which is exactly what obtains in the grammatical (3.22b). The reason is that Maling’s formulation is based on the tendency of the language to position predicative adjectives in a higher positions than participial verbs. This is only a tendency however, and the inverse placement is possible as in (3.22a).

<sup>10</sup>The data are from Holmberg (2003).



### 3. LVM as a violation of locality

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ACCESSIBILITY HIERARCHY (MALING 1980)

*negation > predicative adjective > past participle/ verb particle*

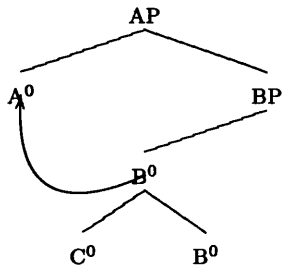
The locality of SF is a fascinating issue. But, it is beyond the scope of this chapter to go into much detail. However, notice that SF is claimed to have the hallmarks of phonological movement (Holmberg 2000). It does not result in any discourse-semantic effects, it moves any phonologically strong (i.e. non-clitic) overt category and is not sensitive to the presence of specific syntactic features. Nevertheless, the locality constraints are arguably defined over the syntactic structure. What is very interesting, however, is the fact that X<sup>0</sup>s and XPs interfere with each other's fronting. This situation is very odd and contrary to the well established generalisation of *Relativised Minimality*.

#### 3.3.2 Excorporation

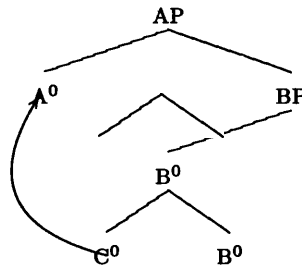
The strongest version of the locality of head movement states that when attraction is established between a head position A<sup>0</sup> and a head position B<sup>0</sup>, A<sup>0</sup> being a c-commanding head, everything that is dominated by the highest segment of B<sup>0</sup> has to move to the position of A<sup>0</sup>. Excorporation is the movement of a subconstituent of B<sup>0</sup> (labelled as C<sup>0</sup> in fig. 3.2a and 3.2b) to the next c-commanding head A<sup>0</sup>. While excorporation structures, strictly speaking, comply with the HMC, for all intents and purposes they are another instance of its violation. The resulting structure is equal to the one in which a head has *skipped* an intermediate head.

### 3. LVM as a violation of locality

(Fig. 3.2a)



(Fig. 3.2b)



There is plenty of evidence that a morphologically complex head cannot form the structure in (b), i.e. that excorporation from such structures is impossible (cf. Baker (1988), who formulates a ban on word internal traces). If excorporation out of morphological complexes was possible, we would find examples like (3.23). However, such examples are never attested.

(3.23) \*Apple<sub>1</sub> is this a [t<sub>1</sub> tree]

On the other hand, it has been argued by various authors (Bošković 1995, 1997, 2001, Koopman 1994, Roberts 1991, Watanabe 1993, etc) that excorporation is possible. Such views entail that while excorporation out of genuine morphological complexes may not be possible, excorporation of a constituent  $X^0$  out of head adjunction structures in which  $X^0$ s are not related as roots, stems and affixes, is in fact attested. One of the arguments for such a view of excorporation has been made in relation to verbal clusters in Germanic OV languages, in which a particular class of auxiliaries obligatorily triggers raising of their infinitival or participial complement.

If we assume that an OV analysis for Dutch is correct, then the underlying order of the verbs in the examples below is  $[V_2 - V_1]$ , where  $V_2$  (*gewild*) is the complement of  $V_1$  (*heeft*). By the classical analysis (Evers 1975), verbal clusters are derived by head movement of  $V_2$  to  $V_1$ . (3.24a) shows the clustering. However, in the (b) example,

### 3. LVM as a violation of locality

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the auxiliary verb is not a member of the cluster anymore, instead it has moved up to the  $C^0$  position. The importance of this observation will become clear shortly, but for now notice that the complement of the perfect auxiliary *heeft* has to be in the form of the participle. In the combination of two verbs, a perfect auxiliary cannot take an infinitival complement, hence the ungrammaticality of (c).

- (3.24) (a) ...*dat Piet dat nooit heeft gewild.*  
...that Pete that never has wanted-**prt**  
'...that Peter never wanted that.'
- (b) *Piet heeft dat nooit gewild*  
Pete has that never wanted-**prt**  
'Pete never wanted that.'
- (c) \**Piet heeft dat nooit willen.*  
Piet has that never wanted-**inf**

Consider now the data in (3.25). (The verbs are marked so that the highest verb bears the index 1, the next highest the index 2 and so forth.) (a) establishes that clustering has taken place in the embedded clause since the order of the verbs is inverted. Notice that  $V_2$  is not in its participial form, but surfaces as an infinitive. This is known as the *Infinitivus pro participio* effect (IPP). Crucially, the complement of the perfect auxiliary must be an infinitive in head clusters in which this verb in turn takes another verbal complement. Now, we see that  $V_2$  in (a) is an infinitive.  $V_2$  is in the infinitival form as well in the (b) example. Contrasting (3.24c above) and (3.25b), we arrive at the conclusion that the perfect auxiliary in (3.25b) must also be a part of the cluster, meaning its trace (its lower copy) must still be present there. So, in other words, excorporation has taken place.

- (3.25) (a) ...*dat Piet de krant heeft<sub>1</sub> willen<sub>2</sub> verscheuren<sub>3</sub>.*  
...that Pete the paper has want-**inf** tear-**up**  
'...that Pete wanted to tear up the paper.'
- (b) *Piet heeft de krant willen verscheuren.*  
Pete has the paper want-**inf** tear-**up**

### 3. LVM as a violation of locality

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‘Pete wanted to tear up the paper.’

However, verb clustering in Germanic does not really provide strong evidence for excorporation. The reason is that it is unclear whether head movement analyses of verb clustering are correct. For one thing, there seems to be a need for a VP analysis for several reasons. One reason is that in some dialects arguments can intervene in verb clusters – this so-called *Verb Projection Raising* is illustrated below in (3.26), from Swiss German (the example is taken from Wurmbrand 2003:22).

(3.26) *ob si hett d Prüeffig chöne besto.* SWISS GERMAN  
whether she had the exam can pass

‘(who knows) whether she would have been able to pass the exam.’

Thus, VP-raising is necessary anyway. Apart from this, it has been noted that next to verb raising and full VP-raising there are ‘intermediate’ structures, where the verb takes along part of its VP under raising while other parts are stranded. Such structures can be analysed as scrambling out of VP before full VP-raising (cf. Den Besten and Rutten’s (1989) discussion on the so-called “third construction”). That implies that verb raising may just be an extreme case of scrambling everything out of VP before VP-raising applies.

Therefore, I will conclude that Germanic V-to-V raising does not provide evidence for excorporation. In fact, I shall assume that all other alleged instances of excorporation can be solved so that the locality of head movement is maintained.

### 3.4 Long head movement analyses of LVM

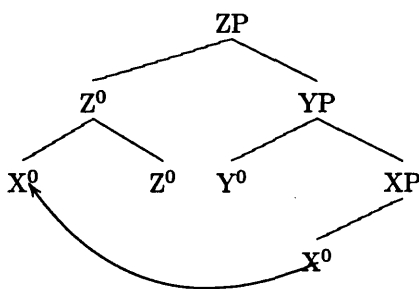
In this section I would like to consider a cluster of analyses of LVM, which, while differing in details, are built around a common core claim, namely that LVM involves long head movement (Borsley, Rivero and Stephens, 1996, Lema and Rivero 1989, Rivero 1991, 1994, 2000, 2001, Roberts 1993a, 1994, forth., etc). On this view a

### 3. LVM as a violation of locality

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verbal head can cross one or more head positions, in one fell swoop, creating an abstract representation as in (fig. 3.3) below.

(Fig. 3.3)



The violation of locality in such structures is allowed by the hypothesis that there are two distinct types of head chains – call them X-chains and Y-chains.<sup>11</sup> Then, by RM, only the elements of type X will block the formation of X-chains, and only the elements of type Y will block the formation of Y-chains. X-chains can freely be constructed across Ys and, vice versa, Y-chains can be constructed across Xs. According to these analyses, it is precisely in these contexts that long head movement obtains.<sup>12</sup>

In Roberts (1993a), the relevant distinction is taken to be parallel to the A/A'–distinction of phrasal movement chains. According to Roberts, A-heads, which form

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<sup>11</sup>The distinction between two types of head chains is due to Li (1990) and Roberts (1993a, 1994, 1997, forth).

<sup>12</sup>In fact, not all long head movement analyses of LVM exploit the same reasoning. One of the early works on the subject, namely Lema and Rivero (1989) argued that LVM is possible through a *Tense marking* procedure. Auxiliaries tense-mark the non-finite verb, whereby a chain of coindexation is established between the two. When the verb is LVM-moved, the auxiliary acts as a link in the head chain of the fronted verb, allowing antecedent government of the participial trace. When an element that lacks finite features (for instance negation) intervenes the chain is interrupted, with the result that LVM across this element is blocked.

### 3. LVM as a violation of locality

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A-head-chains, are those that are involved in the assignment of case or a theta-role. A'-heads, which form A'-head-chains, are those heads that are involved in operator-type relations. The reformulation of RM is given below as (3.27)

(3.27) (in [X ... W ... Z])

W is a typical potential antecedent-governor for Z =

(i) ...in an A'-chain:

for Z = XP, W is an A'-specifier c-commanding Z.

for Z = a head W is an A'-head c-commanding Z.

(ii) ...in an A-chain:

for Z = XP, W is an A-specifier c-commanding Z

for Z = a head, W is an A-head c-commanding Z

Roberts 1993a:40

This distinction is slightly reformulated in other works, so that in Roberts (1994) there are L-related vs. non-L-related heads, expressing the notion of L-relatedness as in Chomsky and Lasnik's (1991). In Roberts (forth) the two types of head chains are operator vs. non-operator chains.

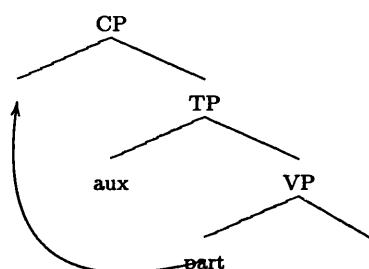
Such a reformulation of RM allows for long head movement only under a set of well defined conditions. The movement between two A-head positions must always be local, and likewise, the movement between two A'-head positions. The contexts where long head movement is possible are only those where a transition from one domain to another occurs: from A to A'- position, and presumably vice versa unless this is excluded otherwise.

Let us consider how the reformulation of RM bears on the LVM data by first considering local LVM. Within long head movement approaches to LVM it is commonly assumed that the landing site of the participle is C<sup>0</sup>, or some head within a more fine-grained C system (for instance Breton LVM targets FinP in Roberts (forth.)).

### 3. LVM as a violation of locality

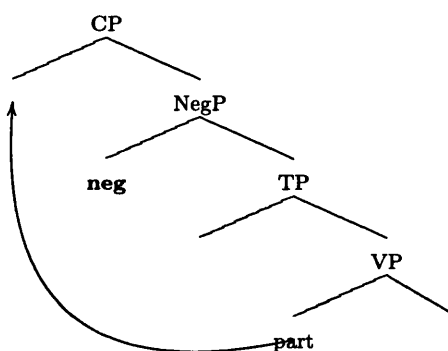
Therefore, the landing site of the LVM-moved participle is an A' (or operator, or non-L-related) position. If the intermediate head(s) across which the participle moves (for instance the clitic auxiliary) belongs to the set of A-heads, then by (3.27) above, LVM is not blocked (fig. 3.4a). RM is respected and the chain is well formed.

(Fig. 3.4a)



✓LVM

(Fig. 3.4b)



\*LVM

If on the other hand, there are A'-head positions between the participle and the landing site (for instance negation), LVM is blocked. In such structures, the LVM-moved participle cannot antecedent govern its trace, and thereby the ECP is violated and the chain is not well formed.

By the same token, other blocking effects, or the lack of them, are accounted for. For instance, in non-local LVM with the structure  $[V_3 - V_1 - V_2 - t_3]$ ,  $V_1$  and  $V_2$  (the clitic auxiliary and the participle of 'to be' respectively) are both A (non-operator) heads, and therefore will not prevent the formation of an A'-LVM chain. The blocking effect of emphatic auxiliaries, on the other hand, is accounted for in the same way as that induced by negation: emphatic auxiliaries may be assumed to be

### 3. LVM as a violation of locality

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A'-heads in an operator-type Focus position.

Consider the clause bounded nature of LVM. I have presented the facts in chapter 1, section 1.3. The crucial observation is that LVM never escapes the clausal domain. The impossibility of extraction of heads out of finite clauses is accounted for under this view as follows: LVM out of the finite clause is ruled out, as suggested by Rizzi and Roberts (1989), since the movement of the verb to  $C^0$  disrupts the selection of the CP by the higher verb. Therefore, in embedded clauses the verb cannot move to its LVM position, and given that this movement is barred, the extraction to the higher clause cannot proceed. If it did, it would involve non-local movement across A'-positions. Given that an LVM chain is an A'-chain, such movement is barred.<sup>13</sup>

#### 3.4.1 Ramifications of long head movement approaches

This approach thus has the merit that it can distinguish between some possible and some impossible instances of LVM in an insightful way. However, I believe that it has some conceptual drawbacks, as well as empirical problems which emerge when we look at the entire range of data introduced in chapter 1.

Let us first consider the conceptual ramifications of such a view. It seems fair to say that LVM and other apparent violations of the HMC are quite rare. Other ways of handling the data (e.g. through phrasal remnant movement) have not been well

<sup>13</sup>Whether head-movement accounts can or cannot deal successfully with the fact that LVM is blocked even in restructuring environments, depends on one's theory of clause-union as well as on one's view of the role of head movement in achieving restructuring. What precisely the structure of the infinitival complements is, is an issue. It is clear that finite clauses, have an elaborate functional domain, including the domain of C. For infinitivals, on the other hand, this is not clear at all. There are several possibilities: they are small VPs, the infinitives are clausal complements to restructuring verbs undergoing structure changing processes, they are clausal complements and the restructuring is achieved via head movement, or they are clausal complements with concomitant remnant VP topicalisation, etc. (see Wurmbrand 2001 and references therein). Given that it is difficult to extrapolate how long head movement analyses would deal with the impossibility of LVM in restructuring contexts, I shall not venture an opinion.



### 3. LVM as a violation of locality

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explored, and at least seem plausible. The issue arises, then, that if a generalisation is made on the basis of a relatively small set of exceptions, how that generalisation handles the rest of the data. The overwhelming majority of instances of head movement appear to be strictly local. *Prima facie*, the reformulated definition of RM in (3.27), would give rise to examples like (3.28). In fact, both are ungrammatical.

(3.28) (a) \*Have<sub>1</sub> you should t<sub>1</sub> come to the cinema with us.

(b) \*Come<sub>1</sub> you should have t<sub>1</sub> to the cinema with us.

By the reformulated RM, one would expect locality violations to abound in those contexts where they are allowed to happen. The question is why this does not occur (or why it does not occur more widely, if the alleged counterexamples are genuine)? The answer to that question would have to include reference to other constraints, because the HMC violations cannot be suppressed with this one general statement. That other constraints may force the data to behave as if the HMC held in the contexts in question is a logical possibility, of course. However, it seems that by doing so, a significant generalisation about the difference between head movement and phrasal movement is missed: if we set aside the LVM-cases (and a few others discussed in section 3 of this chapter), head movement type relations are just extremely local.

Be this as it may, long head movement analyses of LVM also have related empirical problems. This is the issue I turn to next.

#### 3.4.2 Empirical issues

Consider the set of heads which in SC are transparent for LVM. Apart from clitic and non-clitic auxiliaries, this set also contains a focus particle. The set of blocking heads, on the other hand, contains negative and emphatic auxiliaries, as well as the question particle *li*. All the heads that are transparent for LVM have to be A (non-operator) heads. This is questionable for tensed auxiliaries, as semantically speaking Tense appears to be an operator binding the event variable of the verb.

### 3. LVM as a violation of locality

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Note, how this analysis deals with two homophonous kinds of *li*. Consider first the focusing particle. If the participle adjoins to it, then LVM still targets the *closest* head position of the operator (A') domain, and locality is not violated. A potential, but not insurmountable, problem concerns the blocking effect of the question particle *li*, which is standardly assumed to occupy the head position C<sup>0</sup>. The participle, in principle, could raise to *li* and adjoin to it, much as it does in the focused constructions. The fact that the question *li* seems to be exerting blocking effects in *yes/no* questions can be understood if these contexts involve the fronting of the tensed verb which is obligatorily triggered.

Let us return to the issue of negation as a blocking head. In SC the facts are obtained rather nicely. However, crosslinguistically some problems arise. Rivero (1991) observes that the LVM languages fall into two types with respect to the possibility vs. impossibility of LVM in negative contexts. In particular, in SC (also Bulgarian, and Slovenian Rivero *ibid.*), negation does block LVM, while on the other hand, in Slovak for instance, negation does not block LVM. The syntax of negation in the two types of languages is different. Consider the data below:

(3.29) (a) *Ja ni- sam napisala pismo.* SC  
I neg aux-3sg written letter  
'I have not written a letter.'

(b) \**Napisala ni- sam pismo.*  
written neg aux-3sg letter

(3.30) (a) *Ja som ne- napisal list.* SLOVAK  
I aux-cl.1sg neg written letter  
'I have not written a letter.'

(b) *Ne- napisal som list.*  
neg written aux-cl.1sg letter

Note that in SC negation is realised on the tensed auxiliary, while in Slovak it is attached to the non-finite verb. Rivero's (*ibid.*) account of the typological difference

### 3. LVM as a violation of locality

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essentially states that the *syntactic* position of NegP is different in SC and Slovak. While in the former NegP is projected above the auxiliary, in Slovak it is projected below it.

Under the analysis in question, in Slovak and other languages of this type the blocking effect of negation is void since the negation and the participle both front to C<sup>0</sup>. The participle presumably moves locally to Neg<sup>0</sup>, and the whole morphologically complex head moves to C<sup>0</sup> across A-head positions. However, this means that, in fact, this analysis relates the possibility of LVM in negative contexts to whether or not the participle can *incorporate* into Neg, and not to the A vs. A'-distinction. Therefore, while long head movement analyses can capture the data, the correct generalisation about LVM in negative contexts does not relate to the core assumption of the approach (that a distinction should be made between A'-heads and A-heads) but to something else.

Consider next the adjacency fact introduced in chapter 1, section 4. The participle and the auxiliary have to be adjacent. No other constituent may intervene.

- (3.31) (a) *Svirao je bio čelo.*  
          played aux-cl.3sg been cello  
          ‘He had played the cello.
- (b) \**Svirao Petar je bio čelo.*  
          played Peter-nom aux-cl.3sg been cello

If the participle targets the position of C<sup>0</sup>, which is higher than the position of the auxiliary, then other elements - non-intervening (A) heads, as well as any kind of XPs, could in principle intervene between the two. This is not correct for clitic auxiliaries, however. So, in order to account for such a state of affairs, additional mechanisms have to be invoked. One way to circumvent this problem is to argue that the sequence of clitics over which the LVM-moved verb preposes is placed in a projection immediately dominated by CP. For instance, Rivero (1997) argues that clitics are in Specifier positions of the complement of C. This has the effect that

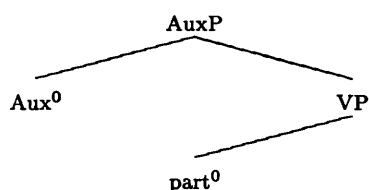
### 3. LVM as a violation of locality

there is no structural position into which an intervening element could be slotted.<sup>14</sup> Note, however, that under the long head movement view, the adjacency of the fronted participle and the auxiliary does not follow from postulating  $X^0$  chains as such.

## 3.5 LVM and excorporation

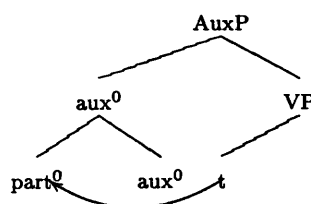
Bošković(1995, 2001) argues that LVM data arise by head adjunction of the participle to the auxiliary. The idea is that the participle adjoins to the auxiliary, resulting in a verb cluster, as in (fig. 3.5).

(Fig. 3.5a)



underlying structure

(Fig. 3.5b)



V-V adjunction

Let me first outline the mechanics of the proposal. Recall from chapter 2, section 8, that the model of cliticisation Bošković argues for involves base generation of clitics within VP, and subsequent movement to the functional projections they are featurally associated with. In particular, clitic auxiliaries are merged in AuxP, and move from this position cyclically through the IP domain projections all the way up to AgrS<sup>0</sup>.

<sup>14</sup>Note that a long head movement view of LVM is not incompatible with the filtering account of cliticisation in Bošković (1995, 2001). Therefore, the impossible structures in (3.31) could be ruled out this way.

### 3. LVM as a violation of locality

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LVM data are generated in the following way: the participial  $X^0$  first adjoins to the clitic auxiliary, the [Part – Aux] complex is then attracted to AgrOP, where both the participle and the auxiliary adjoin to the head of AgrO<sup>0</sup>, checking object agreement features. Now, the clitic is associated with T<sup>0</sup> and AgrS<sup>0</sup> through its featural content, but the participle, crucially, is not. In the model of grammar Bošković assumes, such structures involve obligatory excorporation, so that if in a complex head [X – Y], X is attracted by a higher head and Y is not, X has to excorporate. This is forced by economy considerations, which force movement of as little material as possible. Therefore, at the stage of the derivation where the clitic and the participle form a head adjunction complex in AgrO<sup>0</sup>, the clitic has to move out of this complex X<sup>0</sup>, while the participle remains in AgrO<sup>0</sup>.

Recall that Bošković argues that P2 is determined by a complex phonological filter as in (3.32). Given that this filter derives all clitic-second data, it should also derive LVM structures. Descriptively, we know that the participle comes to precede the auxiliary clitic if and only if no higher element is overtly present such that it may serve as a clitic's host. Therefore, by the second position filter in (3.32), the auxiliary cannot be pronounced anywhere else, but in its intermediate landing site AgrO<sup>0</sup> in cases of LVM.<sup>15</sup>

(3.32) (a) suffix

(b) # cl – where # is a prosodic boundary

Consider the difficulties which arise with three verb LVM structures. The possible patterns are repeated below.

(3.33) (a) [ $V_3$  - -  $V_1$  -  $V_2$ ]

(b) [ $V_2$  -  $V_1$  -  $V_3$ ]

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<sup>15</sup>For all syntactic constituents, the highest copy in the chain is the default spell out position, unless other higher constraints force otherwise.

### 3. LVM as a violation of locality

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The three-verb patterns have to have the following structural representations: (3.33a) is such that  $V_3$  is left-adjoined to  $V_1$  and  $V_2$  right-adjoined to  $V_1$ , whereas the direction of adjunction is the opposite in (3.33b).

Given that the directionality of adjunction is unconstrained, the impossible (3.34a and b) should arise. Bošković excludes such structures by appeal to the P2 constraint. The claim is that phonology parses the two heads as separate constituents, so that for all intents and purposes the clitic is in the third position, and the structures are ruled out.<sup>16</sup>

(3.34) (a)  $*[V_2 - V_3 - V_1]$

(b)  $*[V_3 - V_2 - V_1]$

The crux of the problem is that grammar does not have any means of deriving (3.33 a and b). Consider what should happen: heads move cyclically, so that the lowest verb  $V_3$  should move and adjoin to  $V_2$ . Now, given that both verbs  $V_2$  and  $V_3$  can be raised by LVM, meaning that they both have features to check against the auxiliary, neither of them can excorporate from  $[V_3 - V_2]$  head adjunction, but the complex head has to move as a unit. This predicts exactly the ungrammatical patterns (3.32) above, and moreover, does not allow for generation of the patterns (3.33) which the analysis needs to derive. Hence, there is a problem.

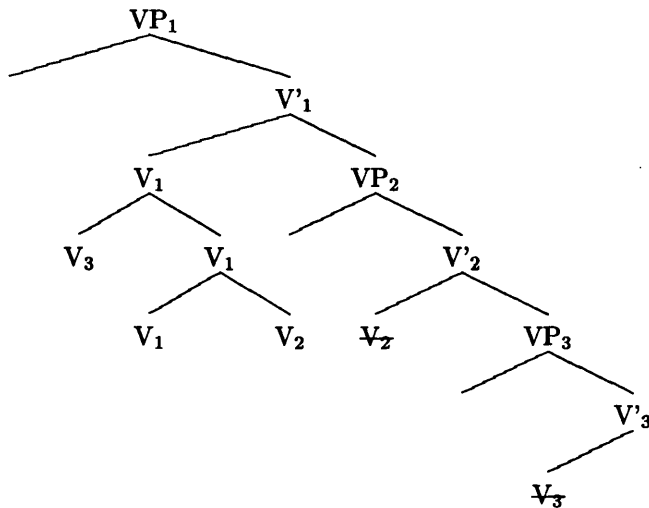
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<sup>16</sup>It is not clear that (3.34a and b) are excluded by phonology. Both  $V_2$  and  $V_3$  are prosodic words, hence at the level of prosodic words, the clitic is in the third position. However, (presumably) they are further incorporated into a phonological phrase. We know that clitics can phonologically attach to prosodic phrases on the basis of the grammaticality of  $[[XP] CL]$  patterns. Now, if prosody involves exhaustive parsing, so that every level  $X^{-1}$  has to be included in the next level up, structures of the  $[[XP] CL]$  type are represented in prosody as  $[W W=CL]$  (where  $W$  is a prosodic word, and the clitic is incorporated into  $W_2$ ). (See van der Leeuw 1997 for an analysis of phonological cliticisation across phrasal boundaries.) Crucially, such structures come to have the same prosodic representation as  $[V_2 V_3=CL]$ , where the clitic is incorporated into the prosodic structure of  $V_3$ , and the whole complex is parsed as a Phonological Phrase.

### 3. LVM as a violation of locality

Now, even though Bošković argues against the possibility of long head movement, this option is still assumed, although in a weaker form. This is because the derivation of LVM in three verb structures are given an analysis by which  $V_2$  and  $V_3$  move separately to  $V_1$ , and the lowest verb skips the position of the intermediate one. Thus, (3.33a) is structured as in (fig. 3.6).

(Fig. 3.6)



The difference with real long head movement is that this intermediate head position now contains a trace, rather than an unmoved verbal head. Bošković refers to Chomsky (1995), who hypothesises that traces are not active with respect to whatever triggers movement, which means they should not count as intervening elements with respect to the HMC or to the MLC in general. However, see Baker (1988) for the claim that that acyclic incorporation should be ruled out.

Under the assumption that the participle is in a low structural position the blocking effects of high elements are accounted for. As noted, heads like the question

### 3. LVM as a violation of locality

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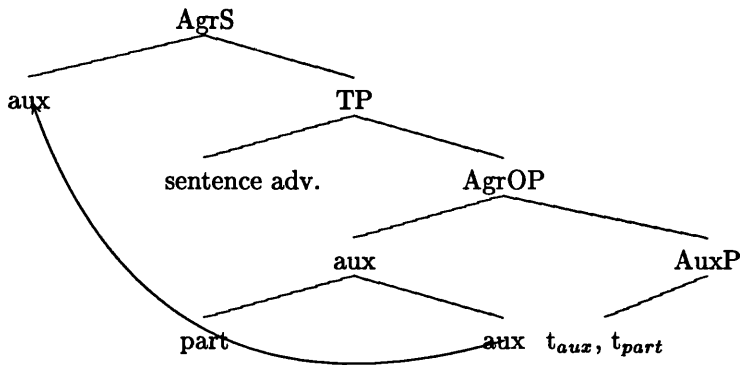
particle *li* and negation block LVM. Perhaps surprisingly, phrasal elements, subjects and sentential adverbs, that appear in a position above the position for the auxiliary in LVM structures block it, too. Recall (chapter 1, section 7.2) that a sentence with an adverbial phrase and auxiliary – participle order is ambiguous: the adverbial can have a VP-modifying reading or a sentence-modifying reading, as illustrated by (3.35a). But in the participle fronting case in (3.35b), the adverb can only be a VP-adverb, not a sentential modifier (Bošković 2001).

- (3.35) (a) *Ivan je mudro prodao kuću.*  
Ivan is-cl wisely sold house  
'Ivan sold his house in a wise manner. or It was wise of Ivan to sell his house.'
- (b) *Prodao je mudro kuću.*  
sold is-cl wisely house  
'He sold his house in a wise manner.'

Bošković rules out cases where a structurally high element co-occurs with participle fronting with the help of the following assumptions. First, the participle adjoins to the auxiliary when the latter is still in AuxP. The auxiliary can cyclically move to a higher head position (namely to AgrS<sup>0</sup> according to Bošković), which is indicated by an example like (3.35a): when there is auxiliary – participle order, the auxiliary can perfectly well precede a sentential modifier. However, the participle cannot be taken along under such auxiliary-raising (which would give rise to the impossible interpretation for (3.35b)) because of a notion of economy according to which the least possible material should be moved. Thus, if the higher head position has some feature that attracts auxiliaries, the auxiliary will excorporate from the cluster it forms with the participle, rather than this cluster moving as a whole. The resulting structure then is as follows:



(Fig.3.7)



Notice however, that there is an exception to the generalisation that high structural elements block LVM. While subjects, adverbs and the question particle *li* are incompatible with it, focusing *li* allows participle preposing (3.36). It is not clear how these facts should be derived under the analysis in question. If *li* occupies a high structural position, in particular a higher position than a projection which immediately dominates AgrP, then the participle, not being licensed to move through the intermediate functional head which intervenes between the two, cannot move locally. In fact on Bošković's view it cannot move to that position at all. Such structures, though, could be derived by long head movement, since under this view the participial head could target FocP directly, presumably in order to check the [+F(ocus)] feature.

- (3.36) *Čitao li je moje knjige, čitao!*  
 read-PART LI aux-CL.3SG my books-ACC, read  
 'He has READ my books, he has'

Bošković collapses LVM over clitic auxiliaries, with LVM over non-clitic (Type 2) auxiliaries. According to him, these data are derived by the same process of head-to-head adjunction. However, this is not very likely to be the case. In head adjunction structures, we do not expect to find other material intervening between the adjoined

### 3. LVM as a violation of locality

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heads. As it happens, overt subjects, as in (3.37) can be placed between the two, indicating that the fronted participle and the auxiliary are not in a tight syntactic relation. In fact, such data are more amenable to long head movement analyses, than to the analysis Bošković proposes.

- (3.37) *Pojeo Ivan bješe sve gljive.*  
eaten Ivan had all mushrooms  
'Ivan has eaten all the mushrooms.'

## 3.6 Conclusion

In this chapter I have briefly discussed some properties of head chains as well as the issue of the locality of head movement. I have also provided a brief discussion of two kinds of LVM analyses, both of which on the basis of LVM data argue for relaxation of locality principles of head movement. So-called long head movement analyses, build around a common core that that head movement may skip over one or more  $X^0$  positions, and the analysis proposed by Bošković (2001) which exploits excorporation in order to account for the data. There are good reasons for doubting that  $X^0$  movement analyses which weaken the locality constraints are on the right track, primarily because the otherwise strong generalisation expressed by the HMC is lost. Moreover, if there is a possibility of an analysis which maintains the strong locality of head movement, but still accounts for the data, such an analysis is to be preferred over those exploiting various means of voiding it. I believe that there are several such analyses available, and this is the issue I turn to in the next chapter.

## Chapter 4

# LVM as complex predicate formation

### 4.1 Direct merger

The majority of analyses of LVM share one assumption: the participle undergoes some form of raising.<sup>1</sup> Either it substitutes in  $C^0$  (long head movement), or it adjoins to the auxiliary (verb raising). Suppose, however, that the participle need not be merged in only one designated structural position i.e. as the head of the VP which is the complement of the projection of the auxiliary. Instead, suppose that the participle may be directly merged as the highest head in the structure, above the auxiliary.<sup>2</sup> This

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<sup>1</sup>This chapter is a modified version of Ackema and Camdzic (2003).

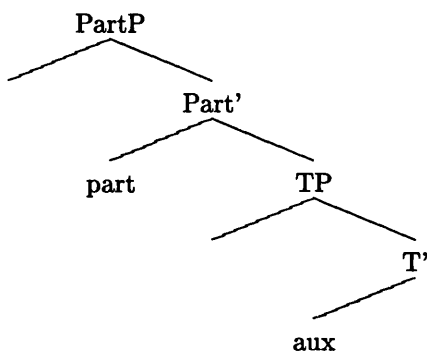
<sup>2</sup>The ‘direct merger’ hypothesis is also an essential feature of some other works on LVM. In particular Schafer (1997) proposes an analysis that bears some similarities to the one developed by Ackema and Camdzic (2003), but also differs from it in several crucial respects. Schafer argues that LVM-fronted participle is a ‘double’ of the participle merged as the head of the VP. LVM constructions are characterised by the presence of the repeated non-finite verb. They involve structures of the type  $[[participle_i; [AUX]][\dots participle_i; \dots]]$ , where the indices refer to the identical lexical elements. At PF, only the higher participle is pronounced. This is quite unlike the proposal by Ackema and

#### 4. LVM as complex predicate formation

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hypothetical configuration created directly by the application of Merge is illustrated in (fig. 4.1).

(fig. 4.1)



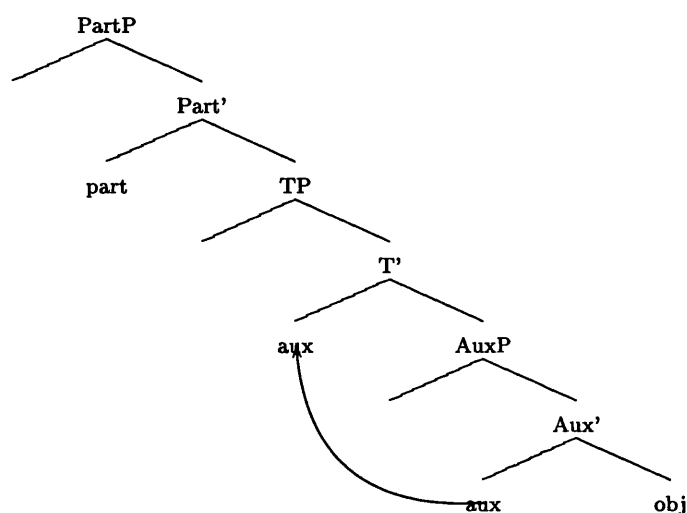
The structure in (fig. 4.1) goes against the ‘classic’ view of clause structure. However, this is precisely the solution pursued in Ackema and Camdzic (2003), who argue that the postulation of such a configuration allows for a more straightforward account of LVM. On this view, the auxiliary is merged as the head of a verbal projection which contains all the arguments. Therefore, the fuller representation of the LVM constructions would be as in (fig. 4.2). (They are assuming that the clitic auxiliary is base generated in AuxP, undergoing raising to  $T^0$ .)

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Camdzic, where non-finite verb is not thus duplicated. Given that Schafer’s work concerns Breton, I do not discuss it in more detail.

#### 4. LVM as complex predicate formation

(fig. 4.2)



Of course, if the classic Government–Binding view of  $\theta$ -theory is correct, then such a structure with ‘inverse’ merger of the participle and the auxiliary should be impossible. In GB theory, the dedicated level at which the thematic structure of the predicate is expressed is D-structure, that is, the structure that results from the merger of all elements, before any movement applies. The projection principle, which holds that the  $\theta$ -criterion must be satisfied at all levels of representation, then insures that movement can never bleed or feed thematic relations (cf. Chomsky 1981).

If the  $\theta$ -criterion were indeed to apply to the underlying representation in (fig. 4.2), things would go seriously wrong. The auxiliary does not have any thematic properties of its own, being a functional rather than a lexical verb. It cannot, therefore, licence any arguments in its projection. Neither can the main verb licence these, since this would have to involve downward  $\theta$ -role assignment into the lower phrase, which is impossible. A general restriction on all instances of  $\theta$ -role assignment is that the argument must c-command the predicate (see Williams 1980 and subsequent

work).

However, as Chomsky (1995) observes, the assumption that there is a level of D-structure, the specific role of which is to fully express all thematic relations and nothing else, is superfluous at best. Restrictions on possible syntactic derivations or representations should follow from constraints imposed by the interfaces between syntax and other modules with which it interacts. The interface that is relevant for our concerns is the one between syntax and the conceptual-intentional module, Logical Form (LF). Given that thematic relations must be visible in the conceptual module, it is at this interface level that the Theta Criterion must hold. There is no reason to assume, however, that the Theta Criterion holds throughout the derivation leading to LF (or in other representations than LF). Consequently, it is in principle possible that movement feeds thematic relations. As long as the Theta Criterion is satisfied at LF, the structure will be syntactically well-formed.

It has in fact been argued by several authors that a proper account of certain constructions must involve movement that feeds a thematic relation (Bošković and Takahashi 1998, Fanselow 2001, 2002, Kuroda 2003, Neeleman 1997, Saito and Hoshi 2000, etc). To illustrate why this is necessary here are two examples, which will turn out to be illustrative for the SC participle fronting case as well.

##### 4.1.1 PP-complements

Neeleman (1997) discusses the question how thematic relations are established in phrases containing a PP-complement, like (4.1).

(4.1) (a) John can always count on his sister

(b) *Marie houdt van ijs met slagroom* DUTCH  
Mary holds of ice-cream with cream  
'Mary likes ice cream with cream.'

The problem is that the  $\theta$ -role that the complement of the preposition receives is not a  $\theta$ -role of this preposition. There is no thematic relation between *his sister*

#### 4. LVM as complex predicate formation

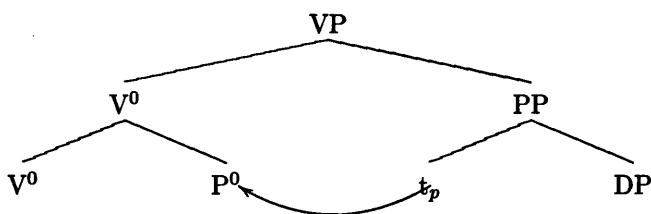
and *on* in (4.1a), as there is in for example *I put the vase on the table*. Rather, the thematic role that *his sister* gets appears to be a role of the entire complex *count on*. Similarly, in (4.1b) the thematic interpretation of *ijs met slagroom* ‘ice cream with cream’ is such that it does not correspond to either a  $\theta$ -role of *houden* ‘hold’ nor to a  $\theta$ -role of *van* ‘of’. Instead, this phrase is interpreted as the internal argument of the entire complex *houden van*, which as a whole means *likes*. Nevertheless, the surface structure of examples like these is such that there is a PP-constituent that is independent of the verb. This is indicated by the fact that the PP can, for example, be fronted as a unit:

- (4.2) (a) On his brother John can never count.  
(b) *Van ijs met slagroom houdt hij niet.* DUTCH  
of ice-cream with cream holds he not  
He does not like ice cream with cream.

The problem is very similar to the one posed by (fig. 4.2). The argument is in a phrase headed by an element that does not  $\theta$ -mark it. But the head of the complex that does  $\theta$ -mark the argument is too high in the structure, so that it cannot  $\theta$ -mark it (downwards) either.

Neeleman argues that having the Theta Criterion apply only at LF solves this puzzle. At (or before) LF, the preposition incorporates into the verb, resulting in a structure like in (fig. 4.3).

(Fig. 4.3)



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#### 4. LVM as complex predicate formation

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At LF, then, the verb and the preposition form a complex predicate. A complex predicate is a cluster of two predicative elements, whose argument structures are combined into a single one (cf. Grimshaw and Mester 1988, Neeleman and Van de Koot 2002, Rosen 1990, among others). According to Neeleman, the result of complex predicate formation (incorporation of P into V) is that the internal  $\theta$ -role in the argument structure of the preposition is equated with the internal  $\theta$ -role in the argument structure of the verb. Because traces inherit all properties from their antecedents, this means that the trace of P in the tree diagram above can now assign a  $\theta$ -role to DP that is equal to the internal  $\theta$ -role of the V-P complex predicate.<sup>3</sup> Here, there is no need to discuss the empirical evidence Neeleman advances to further support the analysis; the relevant point for us is that it crucially involves  $\theta$ -feeding movement, allowed because the Theta Criterion holds at LF only.

##### 4.1.2 Remnant VP-topicalisation

Another construction that has been argued to involve arguments that are not merged in the immediate projection of the head that thematically licenses them is so-called remnant VP-movement in Germanic languages. The argument is made by Fanselow (2001, 2002).

Remnant VP topicalisation, also called incomplete category fronting, involves the fronting of the main verb plus one or more parts of its VP, while other elements belonging to this VP are stranded. An example is given in (4.3).

- (4.3) *Peter gegeben hättest du das Buch nicht dürfen.* GERMAN  
Peter given had you that book not may  
'You should not have given the book to Peter.' (Fanselow 2001)

---

<sup>3</sup>Alternatively, it is perhaps possible that the V-P complex directly  $\theta$ -marks the DP without this counting as downward  $\theta$ -assignment across another head after P-incorporation. Baker (1988) has shown that when a head Y incorporates into a head X, the trace of Y does not count as intervener in any grammatical relation that is to be established between the X-Y complex and lower elements, the so-called Government Transparency Corollary. This may apply to  $\theta$ -assignment as well.



#### 4. LVM as complex predicate formation

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Fronting of a nonconstituent is not allowable, but neither is fronting two constituents (both the indirect object and the participle in (4.3)) separately, because this would violate the Verb Second constraint on the finite verb in German main clauses. In order to avoid these undesirable options, it has been proposed that (4.3) is an instance of ordinary VP-topicalisation, with the stranded constituents being moved out of the VP before it is fronted (Den Besten and Webelhuth 1989, Müller 1998):

(4.4) [<sub>VP</sub> Peter t<sub>1</sub> gegeben]<sub>2</sub> hättest du [das Buch]<sub>1</sub> nicht t<sub>2</sub> dürfen.

The main problem for this analysis, as noted by Fanselow and also by Müller (1998), is that the movement that is needed to empty the VP of those elements that are stranded after topicalisation is not independently motivated. Usually it is assumed that the operation of scrambling, which can place objects in pre-VP positions in German, accomplishes this. An object like *das Buch* in (4.4) can indeed be scrambled across the negator *nicht* in a clause without VP-topicalisation as well:

(4.5) *Er hat das Buch nicht gelesen.*  
he has the book not read  
He has not read the book.

However, in contrast to definite DPs, it is usually infelicitous to scramble non-specific indefinites; see (4.6a). Nevertheless, such objects, too, can be stranded by remnant VP-topicalisation without any problems; see (4.6b).

- (4.6) (a) *?\*Er hat ein Buch nicht gelesen* GERMAN  
he has a book not read  
(non-specific reading) He has not read a book.'
- (b) *Peter gegeben hättest du ein Buch nicht dürfen.*  
Peter given had you a book not may  
You should not have given Peter a book.

The same point can be made with respect to adverbial phrases. These are usually taken to be in fixed positions and supposed not to undergo scrambling themselves, but again, they can either be taken along or be stranded by remnant VP-topicalisation:

#### 4. LVM as complex predicate formation

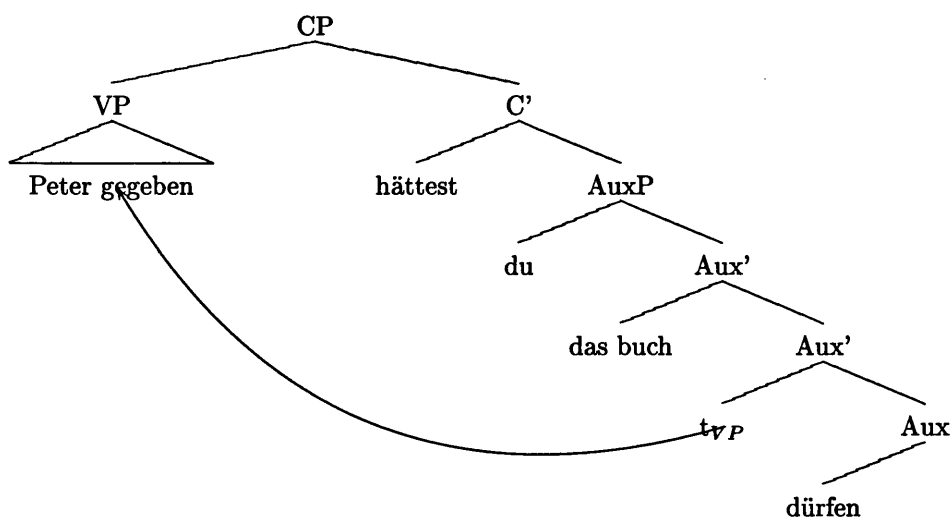
- (4.7) (a) *Zo snel als mogelijk het boek teruggeven zal hij wel niet.*  
 as quickly as possible the book back-give will he well not  
 DUTCH

I don't suppose he will give back the book as quickly as possible.

- (b) *Het boek teruggeven zal hij zo snel als mogelijk.*  
 the book back-give will he as quickly as possible  
 'He will give the book back as quickly as possible.'

Fanselow notes that, if the arguments need not be merged in the projection of the main verb but can optionally be merged in a projection higher up, namely in the projection of the auxiliary, a simple account of remnant VP-topicalisation is possible that does not invoke scrambling elements out of VP that cannot be scrambled. This is because remnant VP-topicalisation can then be taken to be full VP-topicalisation: the fronted VP includes all the material that is merged in it and does not contain any internal trace. The arguments (or adverbs) that are stranded are merged outside of VP, in the projection of the auxiliary:

(Fig. 4.4)

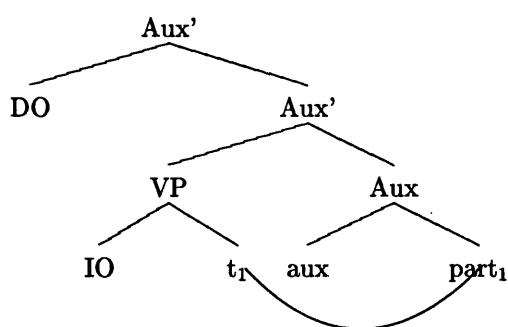


#### 4. LVM as complex predicate formation

This would be impossible again if the Theta Criterion were to hold throughout a derivation, since the auxiliary does not have the thematic capacity to license arguments on its own. But, as noted by Fanselow, if the Theta Criterion holds at LF only, it suffices to form a complex predicate of main verb and auxiliary at or before this level to supply all arguments with their proper  $\theta$ -role.

Complex predicate formation is achieved in this case by the operation of verb raising in Germanic, so by participle-to-auxiliary adjunction. Fanselow argues that at LF the fronted VP reconstructs to its base position. From this position the participle adjoins to the auxiliary, with the result that the two form a complex predicate, sharing a single argument structure. Any argument in the AuxP projection in the tree above can then be assigned a  $\theta$ -role by this complex predicate. Given that the auxiliary does not have thematic properties of its own, this  $\theta$ -role will be identical to a  $\theta$ -role of the participle. Any argument in the lower projection, the VP, can be licensed by the trace of the participle. At LF, then, the relevant part of the structure for a case like (4.3) is as in the diagram below. Here, the Theta Criterion is satisfied.

(Fig. 4.5)



Ackema and Camdzic (*ibid.*) propose that SC participle fronting is another case in which arguments are merged in the projection of the auxiliary rather than in that of

the participle, as in Fanselow's analysis of incomplete category fronting. At the same time, because the auxiliary is merged below the participle in this case, it involves another instance in which arguments are merged in a projection below the one of the head that they thematically belong to, as in Neeleman's analysis of PP-complements.

### 4.2 Complex predicate formation and LVM

A general property of structures in which verb raising takes place is that they show monoclausal behaviour. The combination of auxiliary and participle forms the complex head of a single extended projection. This restructuring effect of verb raising is indicated by things like matrix scope for apparently embedded adverbials, long passive and long scrambling of apparently embedded objects, and others (see Evers 1975, Wurmbrand 2001). Fanselow's analysis of remnant VP-topicalization discussed in the previous section is based on the idea that the behaviour of the two verbs as a single complex head extends to their thematic properties: the auxiliary and the participle form a complex predicate, sharing a single argument structure.

When complex predicate formation takes place, the argument structures of two predicative elements are merged into a single one. When the thematic roles in each of these argument structures have independent content, these roles get identified with one another in accordance with principles that need not concern us here (see Grimshaw and Mester 1988, Neeleman and Van de Koot 2002 and Rosen 1990 for discussion). But when the  $\theta$ -role(s) of one of the heads that make up the complex predicate lack(s) independent content, the argument structure of the complex predicate is identical to that of the semantically contentful predicate in it. This is what happens when a cluster of an auxiliary and a lexically contentful main verb is formed.<sup>4</sup>

Let us return now to the question why a structure is possible with inverse merger of

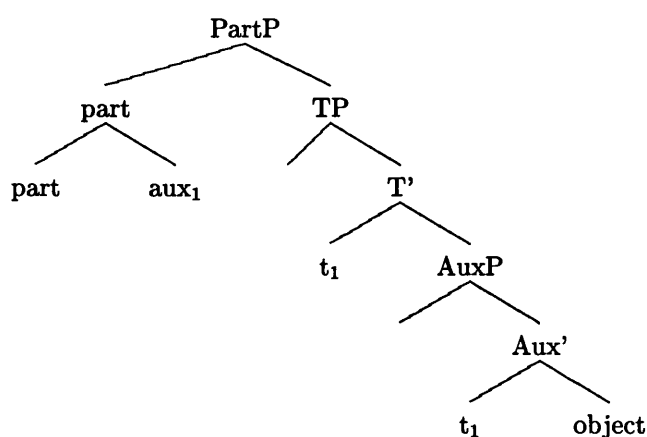
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<sup>4</sup>This does not mean that all auxiliaries necessarily lack a  $\theta$ -grid altogether. An auxiliary can assign a semantically vacuous  $\theta$ -role that must receive content via identification with a  $\theta$ -role of the main verb; see Ackema (1999).

#### 4. LVM as complex predicate formation

participle and auxiliary which according to this analysis underlies cases with participle fronting in SC. This structure can be saved from violating the Theta Criterion by complex predicate formation. At or before LF, the auxiliary adjoins to the participle, with (fig. 4.6) as result.

(Fig. 4.6)



As a result of complex predicate formation, the argument structure of the auxiliary is merged with that of the participle. Since the traces of the auxiliary are identical to their antecedent (compare the copy theory of movement), these too will have the relevant thematic properties in the representation above (compare Fanselow's analysis of remnant VP-topicalization, in which it is the participle that raises: both the participle 'upstairs' and its trace 'downstairs' have the same thematic properties in that either of them can license arguments). This means that, as a result of complex predicate formation, the arguments in the structure can be thematically licensed at LF by that trace of the auxiliary in the projection of which they appear.<sup>5</sup> Hence, the

<sup>5</sup>There is an issue of technical execution here, at least in a strictly derivational theory. If the auxiliary lacks the relevant thematic properties before adjoining to the participle, while its trace

## 4. LVM as complex predicate formation

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Theta Criterion, which applies at LF only, is satisfied.

Of course, what this shows is merely that inverse merger of main verb and auxiliary is technically feasible in principle, as long as it is salvaged by verb clustering. Ackema and Camdzic (ibid.) claim that this actually occurs in participle fronting cases in SC. But it does not appear to occur as freely, cross-linguistically speaking, as regular merger of the auxiliary above the participle. This issue will be discussed below.

### 4.3 Deriving the properties of LVM

#### 4.3.1 Word order

An analysis along these lines accounts for the possible and impossible word orders in LVM cases by straightforward cyclic application of verb raising. No long head movement, not even skipping of traces is necessary. Consider how it works:

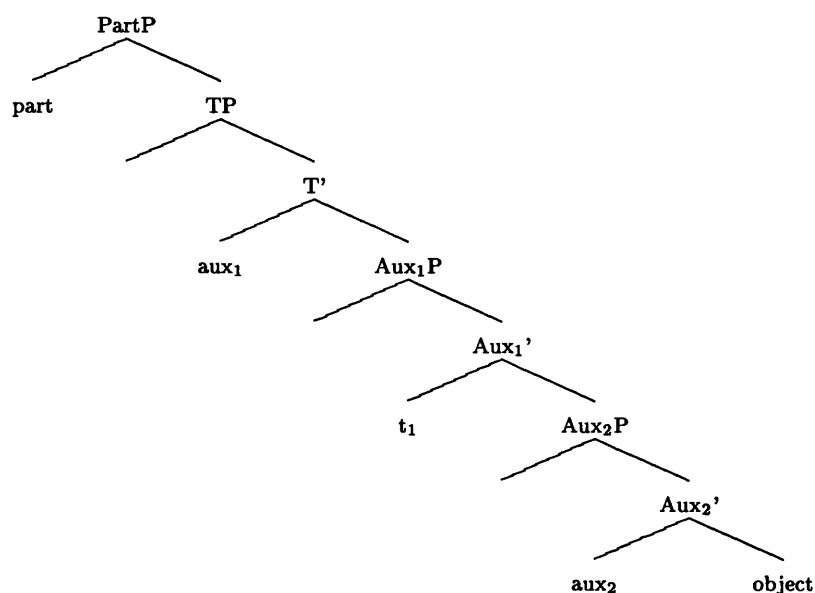
There are two options for verb raising: the lower verb can right-adjoin or left-adjoin to the higher one. In case there are only two verbs, the fronted participle and the auxiliary, left-adjunction would lead to a clitic ending up in first position at PF, so that the structure is filtered out there. In this case, therefore, only the right-adjunction option gives a wellformed output. This is different in case there are three verbs, the participle merged on top, and two auxiliaries, the finite clitic auxiliary ( $Aux_1$ ) and the second, participial, auxiliary ( $Aux_2$ ):

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inherits them from the antecedent after verb raising and complex predicate formation has applied, the Principle of Inclusiveness (cf. Chomsky 1995) would appear to be violated. This can be solved by assuming a checking version of thematic features (see Bošković and Takahashi 1998, Manzini and Roussou 2000, amongst others). In that case, we can assume that the  $\theta$ -roles of the auxiliary do not so much lack content and acquire it by argument structure merger (complex predicate formation), but rather that these roles can have any content as long as this is checked against the identical  $\theta$ -features on the main verb, on which these features are interpretable. Hence, we are dealing with a regular instance of checking uninterpretable against interpretable features.

#### 4. LVM as complex predicate formation

(4.7)



Starting out from the structure above, verb raising by left-adjunction (left-adjoining  $Aux_2$  to  $Aux_1$  and then left-adjoining this cluster to Participle) gives the order [ $Aux_2$ – $Aux_1$ –Participle]. Verb raising by right-adjunction gives the order [Participle– $Aux_1$ – $Aux_2$ ]. Both derivations are strictly cyclic, no separate raising of the lower verb across the position of the intermediate one (whether containing a trace or the intermediate verb itself) is required. If the two auxiliaries could move independently and adjoin on opposite sides of the participle in the highest position, we could get orders [ $Aux_1$ –Participle– $Aux_2$ ] and [ $Aux_2$ –Participle– $Aux_1$ ], which are impossible:

- (4.8) (a) \**Je pojeo bio sve gljive.*  
           is-cl eaten been all mushrooms  
           ‘He had eaten all mushrooms.’
- (b) \**Bio pojeo je sve gljive*  
       been eaten is-cl all mushrooms

#### 4. LVM as complex predicate formation

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Clearly, (4.8a) is ruled out anyway because of the second position requirement on the clitic *je*. (4.8b), however, would only be excluded if the cluster *bio pojeo*, headed by *pojeo*, could not possibly count as first element, which is far from clear.

##### 4.3.2 Intervening elements

Van Riemsdijk (1998) argues that all head-to-head adjunction is constrained by strict linear adjacency. This is to say, a head can only adjoin to another head if nothing intervenes between the two. Van Riemsdijk (ibid.) formulates the constraint in (4.9) below, and provides evidence for it on the basis of various constructions involving head-to-head adjunction in German, French and Dutch.<sup>6</sup>

##### (4.9) THE HEAD ADJACENCY PRINCIPLE (HAP)

A transformational process that affects two head positions must be either  
Head Adjunction or Head Substitution

- (a) *Head Adjunction*: Two phonetically identified heads are adjoined, yielding an adjunction structure, in which case the two heads must be strictly linearly adjacent at the moment of application of the rule.
- (b) *Head Substitution*: A head is moved into a head position which is phonetically empty but which may contain  $\phi$ -features, thereby unifying the two morphosyntactic feature matrices.

If van Riemsdijk is correct, and if all head-to-head adjunction is subject to a strict adjacency condition, at the point in the derivation at which head-to-head adjunction is to take place, the two heads involved must be strictly linearly adjacent. Any element that intervenes between the two blocks the possibility of adjunction,

<sup>6</sup>Some of his data involve Germanic verbal clusters, which he assumes are derived by head-to-head adjunction as in the classical analysis of Evers (1975). However, it is not clear whether the derivation of verbal clusters involves  $X^0$  movement, as there seems to be some evidence that an XP analysis is required (see chapter 3, section 3.2).



#### 4. LVM as complex predicate formation

no matter whether the intervening element is a head or a phrase or whether it is an argument or an adjunct.

Given this, the analysis in (fig. 4.6) accounts for why elements that are high in the structure are incompatible with participle fronting, whereas elements that are lower in the structure are compatible. If the participle raised from its base position to the auxiliary in  $T^0$ , anything in between  $V^0$  and  $T^0$  should block cluster formation, whereas anything above  $T^0$  would not be in the way. But if the participle is merged on top and it is the auxiliary that raises from  $T^0$  to the participle, then anything in between  $T^0$  and the highest head position should block cluster formation, whereas anything below  $T^0$  does not intervene and may be present. As discussed before, the latter prediction is the correct one. Blocking elements include the question particle *li*, negation, sentential adverbs, and (nonfocused) subjects. These arguably occur at or above the TP-level in the left periphery of the clause, that is, in between participle and auxiliary. Nonblocking elements include VP-adverbs and, interestingly, focused subjects. Schematically, we can represent this as in (4.10):

(4.10) ) [<sub>PartP</sub> participle (\**li*) [<sub>TP</sub> (\*Adv) [<sub>TP</sub> (\*Subject) T-Aux [<sub>VP</sub> (Adv) [<sub>VP</sub> ...]]  
(Focus) ]]]

With respect to the possibility of having a focused subject in cases of participle fronting, the crucial observation is that the adjacency restriction on head-to-head adjunction involves *linear* adjacency, rather than hierarchical adjacency; (see Ackema and Neeleman 2002 and van Riemsdijk 1998).

Now, in many languages focused constituents appear in syntactic positions in which their nonfocused counterparts do not appear. Positions at the edge of the clause are particularly popular for focused elements, either at the left edge (in Basque, Hungarian, ...) or at the right edge (in Italian, English, ...). Indeed, SC is another language in which word order correlates with focus structure. Relevant here is that narrowly focused subjects can occur on the right edge of the clause (see Godjevac

#### 4. LVM as complex predicate formation

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2000), so in VOS orders (as in (4.11a)) or OVS orders (as in 4.11b).

- (4.11) (a) *Pojeo je gljive IVAN.*  
eaten is-cl mushrooms-acc Ivan-nom  
'IVAN has eaten the mushrooms.'
- (b) *Gljive je pojeo IVAN.*  
mushrooms-acc is-ccl eaten Ivan-nom

No matter how a focused subject ends up there (by moving rightward into the focus position or by the movement of everything else leftward out of the focus position), i.e. no matter what its hierarchical position, it is clear that in this right-peripheral position it does not linearly intervene between the auxiliary and participle in the left periphery. Hence, in contrast to nonfocused subjects, it does not block verb clustering.

As a final point, it should be noted again that neither head movement by substitution, nor phrasal movement is subject to a linear adjacency requirement between source and goal positions. This means that in the absence of participle fronting, so with [Aux ... Participle] orders, the auxiliary can substitute into higher heads without problems. No element will block substitution of the auxiliary into  $C^0$ , for instance, (cf. Bošković 1995), just as no intervening heads or phrases block verb second in a language like Dutch. Note also that the auxiliary and the participle themselves need not be adjacent in [Aux ... Participle] orders, since no verb clustering takes place in this case. Indeed, sentential adverbs as well as VP-adverbs can freely intervene in this case:

- (4.12) *Ivan je mudro prodao kuću.*  
Ivan-nom is-cl wisely sold house-acc  
*Ivan sold his house in a wise manner* or *It was wise of Ivan to sell his house.*

Similarly, if the participle ends up in the left periphery of the clause because it is taken along under an instance of phrasal movement such as VP-topicalization, no blocking effects are to be expected. Indeed, VP-topicalization differs from participle fronting in being able to cross structurally high elements like negation.

### 4.3.3 A trigger for restructuring

The analysis by Ackema and Camdzic follows the basic insight of Bošković (1995, 2001) and Wilder and Čavar (1994) that SC participle fronting involves verb clustering (V-to-V adjunction) rather than substitution or phrasal movement. A potential problem for this type of analysis is that the trigger for verb restructuring is not clear. This problem is not just another instance of the question what causes verb clustering in general, but is more serious. This is because verb clustering is not expected to occur in SC at all, given that, as far as the evidence outside SC goes, it appears that verb clustering is restricted to OV-languages and does not occur in VO-languages (cf. Bobaljik 2003).

Indeed, it can be observed that in the regular case there is no verb cluster formation in SC. In [Aux ... Participle] orders, so when there is no participle fronting, material can intervene between the auxiliary and the participle. This can be shown by an example like (4.13), where an adverb intervenes between auxiliary and participle.

- (4.13) *Mudro bješe brzo prodao kuću.*  
 wisely was-3sg quickly sold house-acc  
 'It was wise of him to have sold the house quickly.'

Bošković (1995) does argue that, in cases with three verbs, nothing can intervene between the two lowest ones (the participial ones), which he takes to be an indication that the lowest verb adjoins to the intermediate one. Bošković provides the following paradigm as evidence for this adjacency restriction, hence for verb clustering (his (22) and (23)):

- (4.14) (a) *Vas dvoje ste bili čekali Marijinu prijateljicu.*  
 you two are-cl been waited Marija's friend  
 'You two had been waiting for Marija's friend.'
- (b) *Vas dvoje ste Marijinu prijateljicu bili čekali.*  
 you two are-cl Marija's friend been waited

#### 4. LVM as complex predicate formation

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(c) \**Vas dvoje ste bili Marijinu prijateljicu čekali.*  
you two are-cl been Marija's friend waited

(d) \**Marijinu prijateljicu ste bili vas dvoje čekali.*  
Marija's friend are-cl been you two waited

However, before it can be concluded that there is a strict adjacency requirement on the two participles, we must first consider what kind of elements we would expect to occur in between them in the first place. In (4.14b,c) the object that we see in its base position in (4.14a) is shifted leftward. This is presumably an instance of focus shifting, since the order in (4.14b) goes together with narrow focus on the object. Taken together, what (4.14b,c) show then is that the focus fronting must move a constituent to the left edge of the participle's projection. This is not surprising, since it is a general property of focus shifting that it targets particular edges of phrases (cf. Godjevac 2000). In (4.14d) it is the subject that intervenes between the two participles. What this shows is that a participle cannot be moved into the TP domain, to a position higher than the subject, which is also not really surprising.

What we would expect to possibly occur in between the two participles are modifying adverbials like the VP-adverb that intervenes between auxiliary and participle in the example below. As it turns out, there is no problem with having these constituents intervene between the participles:

(4.15) (a) *Ivan je bio brzo prodao kuću.*  
Ivan-nom is-cl been quickly sold house-acc  
'Ivan has quickly sold the house.'

(b) *Ivan je bio loše popravio radio.*  
Ivan-nom is-cl been badly repaired radio-acc  
'Ivan has repaired the radio badly.'

Apparently, then, there is a connection between participle fronting and verb clustering in SC: the latter obligatorily occurs if the former occurs, but is absent otherwise.

#### 4. LVM as complex predicate formation

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This is directly accounted for by the analysis put forward above. There is a very clear trigger for clustering if participle fronting consists of merging the participle above the auxiliary, in the form of the Theta Criterion (whatever shape that takes). As explained earlier, if the auxiliary did not form a complex predicate with the participle (by either adjunction or reanalysis), the arguments in the structure would fail to be thematically licensed. This is not so if the regular order of merger is followed, and consequently clustering is not required in that case, and is not expected to occur then in the VO language SC.

As a potential problem for invoking the Theta Criterion as the trigger for verb clustering one may point to the fact that participle fronting is possible in clauses without any arguments as well. This potential objection is mostly voided if it is not just the presence of arguments in a projection that is dependent on there being a lexically contentful predicate as head, but the presence of modifiers as well, which seems plausible enough. In other words, the notion of licensing can be generalized from thematic licensing of arguments, used above, to licensing of other dependents of the verb as well (cf. Travis 1988). Hence, in the presence of modifiers, too, the head of the projection must acquire content, which is achieved by raising the auxiliary to the participle and complex predicate formation.

The only case, therefore, in which there is no such trigger for raising is when there is apparently no dependent of the main verb present at all, as in (4.16).

- (4.16) *Pojeo je.*  
eaten is-cl  
'He has eaten something.'

Precisely in this case, however, it is actually untestable whether clustering takes place or not: if there are no other elements besides participle and auxiliary, then we cannot see either if these elements can intervene between these verbs or not.

##### 4.3.4 Gapping

An important difference between the analysis proposed in Ackema and Camdzic and other clustering analyses for SC participle fronting is that the participle is the highest head in the extended projection, not the auxiliary (there is inverse merger). There may be an additional piece of evidence for this conjecture, although the argument is somewhat intricate and the data not exactly clear-cut. The evidence comes from data involving gapping.<sup>7</sup>

Gapping, or coordinate ellipsis, targets the verbal head of the second conjunct in a coordination, as in (4.17a) (cf. Neijt 1980). This process seems to be recursive: if there are more verbal heads in an extended projection, they can be gapped in succession, as in (4.17b–d) (cf. Williams 1997). However, crucially for our purposes, no head can ever be skipped in this process. If a lower head in an extended projection is gapped, then so must all the heads above it in this projection; see (4.17e–f). So the highest head must always be targeted if there is coordinate ellipsis (Johnson’s 2002 No Embedding Constraint).

- (4.17) (a) Mary listens to Messiaen and Harry ~~listens~~ to Kurtág.  
(b) Mary wants to listen to Messiaen and Harry ~~wants~~ to read about Kurtág.  
(c) Mary wants to listen to Messiaen and Harry ~~wants to~~ read about Kurtág.  
(d) Mary wants to listen to Messiaen and Harry ~~wants to listen~~ to Kurtág.  
(e) \*Mary wants to listen to Messiaen and Harry wants/tries ~~to~~ read about Shostakovich.  
(f) \*Mary wants to listen to Messiaen and Harry wants/tries ~~to read~~ about Shostakovich

Given this, it is predicted that, if the participle is the highest head in the extended projection in cases of SC participle fronting, it should be gappable on its own, leaving

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<sup>7</sup>There is a possibility that the data in this section involve pseudogapping, and that the discussion is, in fact, misleading. Which position is correct is a matter for further research.

#### 4. LVM as complex predicate formation

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the auxiliary as an overt remnant. If the auxiliary were the highest head, this should be impossible. Conversely, we predict that in such cases the auxiliary should not be gappable on its own, stranding the participle, although it should be possible to do exactly this in all other circumstances, when the auxiliary is regularly merged as the highest head. If the auxiliary is merged as the highest head, as in other clustering analyses, the participle should under no circumstances be gappable on its own. Let us see in how far these predictions can be tested.

Note first of all that in periphrastic tenses in SC the auxiliary may be gapped and leave the participle as a remnant, both when there is participle fronting in the first conjunct and when there is not (cf Bošković 2001, Stjepanović 1998):

- (4.18) (a) *Ivan je pojeo gljive i popio vino.*  
Ivan-nom is-cl eaten mushrooms-acc and drank wine-acc  
'Ivan has eaten mushrooms and drunk wine.'
- (b) *Pojeo je gljive i popio vino.*  
eaten is-cl mushrooms-acc and drank wine-acc  
'He has eaten mushrooms and drunk wine.'

If the second conjunct in (4.18) involves participle fronting, our analysis makes the wrong prediction, namely that the auxiliary should not be gappable on its own. However, it is difficult to assess whether or not there is participle fronting in the second conjunct in (4.18), since, precisely because the auxiliary is gapped, this obviously cannot be deduced from the surface order between participle and auxiliary. That the first conjunct shows participle fronting in (4.17b) does not really tell us anything in this respect. The idea that only structurally identical phrases can be coordinated has been shown to be untenable (Johannessen 1995, Sturm 1986). Thus, two clauses can be coordinated when there is topicalization in the first but not the second (4.19a), and gapping is still possible in that case as well (4.19b).

- (4.19) (a) *DE HOND verzorgt JAN maar MARIE doet DE*  
the dog takes-care-of John but Mary does the  
*PLANTEN.* DUTCH  
plants

#### 4. LVM as complex predicate formation

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‘JOHN takes care of THE DOG, but MARY takes care of THE PLANTS.’

- (b) *DE HOND verzorgt JAN maar MARIE verzorgt DE*  
the dog takes-care-of John but Mary the  
*PLANTEN.*  
plants

What could in principle give an indication of whether or not there is participle fronting in the second conjunct in (4.19) is to see if elements that block this construction, like sentential adverbs, can be added to this conjunct. This is possible in (4.20a) which, perhaps unsurprisingly, indicates there is indeed no participle fronting in the second conjunct there:

- (4.20) *Ivan je sigurno pojeo gljive i vjerovatno popio*  
Ivan-nom is-cl certainly eaten mushrooms-acc and probably drank  
*vino.*  
wine-acc  
‘Ivan has certainly eaten mushrooms and probably drunk wine.’

Adding a sentential adverb to (4.18b) gives a marginal result:

- (4.21) *?Pojeo je gljive i vjerovatno popio vino.*  
eaten is-cl mushrooms-acc and probably drank wine-acc

However, there is an independent reason for this. The disanaphora requirement on overt remnants in coordinate ellipsis requires that for each overt remnant in the second conjunct, a parallel but semantically contrastive element be found in the first conjunct. But adding such elements to the first conjunct in (4.18b) is impossible, because of the participle fronting that has taken place in this conjunct. There may be one exception, however. Negation contrasts with the absence of negation, so with a simple positive declarative sentence. Thus, it is possible to strand a negator in coordinate ellipsis that does not contrast with a parallel overt element in the first conjunct (Ackema and Camdzic use a Dutch example in (4.22) rather than an English one, because of the complication that negation requires *do-support in English*:



#### 4. LVM as complex predicate formation

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- (4.22) *Marie luistert naar Bartok maar Piet ~~luistert~~ niet naar Messiaen.*  
Mary listens to Bartok but Piet not to Messiaen  
DUTCH

‘Mary listens to Bartók but Piet does not listen to Messiaen.’

Interestingly, it is possible to add negation to the second conjunct in (4.18b):

- (4.23) *Pojeo je gljive ali nije popio vino.*  
eaten is-cl mushrooms-acc but not drank wine-acc  
‘He has eaten mushrooms but has not drunk wine.’

This indicates that there need not be participle fronting in this conjunct. Hence, the possibility of gapping the auxiliary while stranding the participle comes as no surprise. Of course, it is impossible to tell whether, in the absence of negation, there *cannot* have been participle fronting in the second conjunct, so in this respect the first prediction cannot really be tested.

The second prediction made by this analysis therefore is more relevant: in principle it should be possible to gap the participle on its own and strand the auxiliary in case LVM has taken place. This prediction is not easy to test, however. Consider why: Participle fronting occurs when the auxiliary is a clitic. This means that, usually, if the participle is merged high and then is gapped, it cannot strand the auxiliary, because that would leave a clitic in first position. (The second position requirement of clitics is a PF requirement, not a syntax-internal one, and hence it is sensitive to whether or not there is gapping; see Bošković 2001). This is why (4.24) is impossible.

- (4.24) \**Pojeo je gljive i je pastrmku.*  
eaten is-cl mushrooms-acc and is trout-acc  
‘He has eaten mushrooms, and trout too.’

There may be one context in which the prediction can be tested, however. In contrast to *i* (‘and’), there is a coordinator which itself can act as host for clitics, namely *ali* but. If there is gapping in coordinations that involve this coordinator

#### 4. LVM as complex predicate formation

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there should not be a problem with having a clitic auxiliary directly following it. Indeed, the following is fairly acceptable:<sup>8</sup>

- (4.25) *Vidjeli su Ivana ONI, ali je Marka ONA.*  
seen are Ivan they but is Marko she  
'THEY have seen Ivan but SHE has seen Marko.'

This would be a case of illicitly skipping a head in gapping if the participle were not the highest head in the structure. But if it is the highest head, this can be targeted by a regular instance of coordinate ellipsis.

##### 4.3.5 On inverse merger

Ackema and Camdzic argue that it is possible to merge a participle above its associated auxiliary, as long as the two undergo complex predicate formation before, or at LF, the only level at which the Theta Criterion is relevant. However, if this order of merger is allowed, it must be asked why we do not encounter it more often, cross-linguistically speaking. Why is it not allowed in any language to merge participles and auxiliaries in either order?

Before discussing this, however, let me point out that it is actually somewhat difficult to determine how rare 'inverse merger' really is. The SC case as discussed here is certainly not the only candidate for an analysis along these lines. Stylistic Fronting in present day Icelandic and in older stages of some Scandinavian and Romance languages shows properties that are similar to those of long head movement (see Holmberg 2003 and references mentioned there, also chapter 3, section 3.1.) Stylistic fronting puts some predicative element in front of the clause, moving it (apparently) across its associated copula or auxiliary. Stylistic fronting can apply to

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<sup>8</sup>As observed in the previous footnote, it is possible that the data discussed in this section involve pseudogapping, rather than gapping. It has been noted, however, that pseudogapping in English is markedly less acceptable when subjects in two coordinates are unlike (Baltin 2003, Levine 1986). The example in (4.25) involves two different subjects, which may indicate that we are dealing with gapping structure.

#### 4. LVM as complex predicate formation

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participles, but it applies to other predicative elements as well. The same is true for the SC construction. Stylistic fronting applies to heads, (although it presumably also applies to phrases, cf. Holmberg 2003). Moreover, it is constrained by a 'subject gap' restriction: like SC participle fronting, stylistic fronting is blocked if there is an overt subject. If an analysis in terms of inverse merger is to apply to stylistic fronting, we would also expect sentential adverbs to be problematic in those languages where these adverbs appear to the left of the auxiliary/copula, which they indeed are (Holmberg *ibid.*).

All the same, it seems clear that not all languages with periphrastic verbal complexes allow 'inverse merger'. In this respect there is another interesting parallel between participle fronting and stylistic fronting: stylistic fronting is said to occur only in languages which allow for some form of subject agreement on nonfinite predicative elements. For example, the mainland Scandinavian languages lost stylistic fronting when they lost subject agreement, whereas Icelandic has retained both; Falk 1993 argues that there is a direct connection between the two. Similarly, Broekhuis and Migdalski (2003) argue that the crucial factor which allows for participle fronting in Bulgarian is that the participle carries subject agreement. Ackema and Camdzic follow their insight, implementing it a bit differently: they argue that the participle's property of carrying subject agreement makes it possible to merge it above the auxiliary, as in this analysis of SC participle fronting.

Note first that the 'inverse' order of merger does not go against any principles of selection. It is sometimes said that an auxiliary 'selects' the associated participle. In structural terms, a functional head Aux would select for a PartP. But as argued by Grimshaw (2003), this kind of 'selection' of a functional head for (the projection of) another head is very different from selection between a lexical head and its complements.

Consider for instance the question what the head is of a verbal extended projection in a periphrastic tense: the auxiliary(as is usually assumed), or the participle?

#### 4. LVM as complex predicate formation

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Usually, the head is that thing in a projection which cannot be left out, at least not without changing the nature of the projection. In a VP it is impossible to leave out the verb. But it is possible to leave out an NP complement to the verb and still have a VP. In contrast, in a verbal extended projection it is impossible to leave out either the auxiliary or the participle(-phrase) without this resulting in an ill-formed verbal extended projection anymore. What really needs to be said, then, is that actually both the auxiliary and the participle are heads of that extended projection (as in Grimshaw 2003). Hence the introduction of the concept 'extended head' in Grimshaw (2003).

Of course, some verbs obligatorily take a complement, and in that case this complement cannot be left out without the whole projection not being a wellformed VP anymore. We might thus say, as is sometimes done, that an auxiliary *obligatorily* selects a VP (or PartP). However, this misses the fundamental difference between the two situations: within an extended projection, there *never* is an 'intransitive' functional head, which happens not, or only optionally, to take an XP complement. The option of intransitivity, i.e. of *not* selecting anything, just does not exist for a functional head - which makes it questionable that the relation between the heads in an extended projection is one of ordinary selection at all. This implies that the question about the order in which the heads in an extended projection come is one that is independent from principles of selection. Instead, the order of the heads within an extended projection is more templatic in nature: there is some universal functional hierarchy that states in which order the heads in a extended projection come (cf. Cinque 1999, Grimshaw 2003).

The view Ackema and Camdzic adopt on how this functional hierarchy connects to the syntactic and morphological structures that realise it is much as in Williams 2003. In this view the functional hierarchy is not a sequence of heads in syntactic structure, nor a sequence of affixes in morphological structure. Rather, such a sequence of heads and/or affixes is the *realization* of the functional hierarchy. There is

#### 4. LVM as complex predicate formation

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a universal template that specifies in which hierarchical order functional features are to be realised. For verbal projections, this functional hierarchy might look as in (4.26) (this hierarchy may be more elaborate in practice, but this is not directly relevant for our concerns; they follow Borer 2003 and others in assuming that the feature in the 'AgrO' position is really an Asp(ectual) feature).

(4.26) C — AgrS — T — Asp — V

This functional hierarchy may be realised via syntactic means, by heads in an extended projection. Alternatively, it may be realised via morphological means, by affixation. And it can be realised via a combination of these means. It is not necessary to assume that affixes are syntactic heads, picked up by a stem via head-to-head movement; they are merged directly with the stem (on the problems facing syntactic affixation, see Ackema and Neeleman 2003). As Williams (2003) points out, the Mirror Principle (Baker 1988) follows from the existence of the functional hierarchy in (4.26) as such, plus the assumption that the features it mentions can alternatively be realised either by syntactic heads or by morphological affixes. Suppose, for example, that language A realises (4.26) exclusively by syntactic means. The hierarchy in (4.26) dictates that the heads realising the various features come in the following order:

(4.27) [<sub>CP</sub> C [<sub>AgrSP</sub> AgrS [<sub>TP</sub> T [<sub>AspP</sub> Asp [<sub>VP</sub> V ]]]]]

Suppose language B realises (4.26) exclusively via affixation. The hierarchical ordering of the affixes must be in accordance with (4.26), which means a morphological structure as in (4.28a) results if we are dealing with prefixes, and a structure as in (4.28b) results if we are dealing with suffixes. Comparing (4.27) with (4.28), and (4.28a) with (4.28b), we see the Mirror Principle effect.<sup>9</sup>

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<sup>9</sup>Of course, not every language shows a number of heads and/or affixes that correspond in one-to-one fashion to the features mentioned in the hierarchy. This may be for one of two reasons. First, a particular feature might not be expressed in the language at all (say, in English the feature responsible for the verbal category dualis). They leave open the question whether the language in this case has

#### 4. LVM as complex predicate formation

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(4.28) (a) [C [Agrs[T[Asp[V]]]]]

(b) [[[[V[Asp]T]AgrS] C]

Two things are crucial now. The first is that, as noted, it is possible to realise the functional hierarchy by a *combination* of heads and affixes, one head carrying affixes that realise part of the hierarchy, and another head (or heads) carrying affixes that realise the other part of the hierarchy. Because the hierarchy must be complied with, each head must realise a contiguous part of the hierarchy. Having one head realise a discontinuous part of the hierarchy and another head the remaining part would violate the specified hierarchical order of realisation.

The second thing that is important in this account of 'inverse merger' is the phenomenon of multiple exponence (see Stump 1998 and references mentioned there): it is possible that more than one head in an extended projection is morphologically specified for the same feature. Being morphologically specified for a feature shows itself, as usual, in a morphological sensitivity to the value of the feature in question: the shape of the heads in question differs according to the different values of the feature. However, the functional hierarchy in (4.26) demands only that the feature in question be expressed once. This means that if two heads in the same extended projection are both specified for a particular feature, this feature will be, in Williams's (2003) terms, *silent* on one of the heads. This means that this feature on this head is not used to realise a part of the hierarchy in (4.26). Rather, the identical feature on a null realisation of this feature, i.e. whether the hierarchy leads to exactly the same hierarchical structures universally, or whether there is more flexibility so that the size of the structures realising the functional hierarchy can vary according to which features are actually expressed (for arguments in favour of such flexibility, see Ackema et al. 1993, Grimshaw 2003; for arguments in favour of universal functional structures see Cinque 1999). Second, the number of heads and/or affixes can also be less than the number of features mentioned in the hierarchy because of fusion: it is possible that one head or affix expresses more than one feature simultaneously (note that this is different from the first case in that in the case of fusion the morphological shape of the head is sensitive to the value of both features).

#### 4. LVM as complex predicate formation

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the other head is used for this. (To avoid potential confusion, note that if a feature is silent in this sense, this does not mean that the morphological shape of the head that it occurs on does not alter according to the value of the feature anymore; it just means that the feature is not taken to realise a part of the functional hierarchy in (4.26)). Which head is used to realise the feature mentioned by (4.26) and which head has the silent feature is in principle optional, but in practice this can be restricted by the other features that both heads carry, as these need not be identical and the overall hierarchy in (4.26) must be respected.

Now let us take a closer look at the functional hierarchy that is usually assumed. There is one element in (4.26) that immediately stands out as an oddity, an element that is fundamentally different from all the others: V. This is not a functional feature at all, like the others. Indeed, it presumably is not a feature at all. As argued in detail by Baker (2003), the category features [+ or - V] and [+ or -N] have never been given real empirical content; when one looks at what a V actually *is*, what makes it different from other categories, it is a particular syntactic property according to Baker (verbs but not other categories can directly take a specifier). Similar considerations hold for the other lexical categories.

Seen in this light, it is not such a radical move, but rather an almost unavoidable one, to leave out V from the hierarchy in (4.26). If we do this, there is nothing in the theory that explicitly states that the lexical verb should realise the lowest head position in an extended projection. If a wellformed structure is to be built, the functional hierarchy in (4.26) must be realised by a number of heads carrying appropriate morphology, one of these heads must have lexical content, and any arguments that depend on this lexical content need to be properly  $\theta$ -marked at LF. Nothing further need be said.

The verb with lexical content will be merged in some head position in which it can realise one or more of the features in (4.26). If it cannot realise all features, auxiliary verbs will be used to realise the other features. Usually, the lexical verb is realised as

#### 4. LVM as complex predicate formation

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the lowest element, so in Asp (if that is the lowest element on the hierarchy). This is indeed the most economical option, since in this position it can directly license its object and subject, there is no need for complex predicate formation to save the structure at LF. Note that even in this 'normal' case there is no VP, at least not one that is distinct from AspP. The projection of the lexical verb may always be called VP, since it is the projection of V, but at the same time it is the projection of a head that realises some feature(s) of (4.26). In this case it is also the projection of the head that realises Asp, so its projection is an AspP as well as a VP.<sup>10</sup> In a periphrastic tense, the verb(s) without lexical content, the auxiliary(s), must hence in the 'normal' case realise the features higher up in the hierarchy, in particular AgrS and T. The usual division of labour hence is as follows:

- (4.29)      C – AgrS – T – Asp  
              Aux (AgrS,T); Pple (Asp)

Now, as noted by Broekhuis and Migdalski (2003), the crucial property of languages that allow long predicate fronting (with the exception of Breton) is that they have the morphological quirk that nonfinite forms of the verb are specified for AgrS. So participles (and other predicative elements) are specified for AgrS and Asp, though not for T. In other words, they are specified for features that are discontinuous on the feature hierarchy. Because the features it is specified for are not contiguous on the functional hierarchy, this type of head can often not actually be used to realise part of this hierarchy (because the hierarchy will not be realised in the proper order if T is realised by an element either above or below this head).

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<sup>10</sup>There may be a parallel here with recent work by Borer (2003) and others, in which it is assumed that all licensing and thematic interpretation of arguments necessarily takes place outside of VP. Although Borer still assumes there is a distinct VP below the lowest functional projection, this is in all but a few cases evacuated by all the material present, and it is always evacuated by the verb, which means there is little reason left to still make a distinction between a separate AspP and VP as the lowest projection.



#### 4. LVM as complex predicate formation

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However, there is an escape route in the form of multiple exponence, if there is another head that is partly specified for the same features. In the case at hand we need a head that is specified for T and also for the lower feature that the nonfinite verb can also realise, which we have labelled Asp. If auxiliaries in periphrastic tenses in SC are indeed specified for Asp in addition to T, we get the option of realising the feature hierarchy as in (4.30b), in addition to the 'normal' way of realising it, as in (4.30a). (Here, features between double brackets are 'silent' in Williams's sense. Note again that 'silent' does not mean 'morphologically unexpressed' - the feature still is a feature of the element in question, and hence gets its normal morphological expression, 'silent' means that the feature does not realize a part of the functional hierarchy in this case).

(4.30) (a) C – AgrS – T – Asp

Aux (AgrS, T, (Asp)); Prt ((AgrS), Asp)

(b) C – AgrS – T – Asp

Part((AgrS, (Asp))); Aux ((AgrS), T, Asp)

Though possible, realisation as in (4.30b) necessitates complex predicate formation, in order to licence the arguments in the TP and AspP projection. This means realisation as in (4.30a) is more economical, which may account for the last resort flavour of constructions involving (4.30b), which occur when there is a second position clitic requiring a host - without actually having to assume that a movement process is triggered by the phonological requirement of the clitic. In languages in which participles do not carry an AgrS feature to begin with, the participle must by necessity be merged low, as the AgrS feature in the functional hierarchy can only be realised by an auxiliary in that case.

## 4.4 Conclusion

The analysis presented in this chapter argues that a crucial property of LVM structures is that they have to undergo complex predicate formation. A complex predicate is formed by the incorporation of the auxiliary into the participle, the process which hinges on the two heads being strictly adjacent as given by the Head Adjunction Principle in (4.9) above. Indeed, whenever the participle preposes over clitic auxiliaries, the participle and the auxiliary cannot be separated by any non-clitic material. However, there is one very important residue of cases which cannot be treated in this way. These are LVM constructions where the non-finite verb comes to precede a non-clitic auxiliary. These structures exhibit several differences from LVM across clitic auxiliaries, amongst which is the fact that the non-finite verb and the non-clitic auxiliary need not be adjacent. Hence, we may find examples like (4.31) where a sentential subject intervenes between the two.

- (4.31) *Vidjeo Ivan bješe Petra.*  
 seen Ivan-nom was-3sg Peter-acc  
 ‘Ivan had seen Peter.’

Given the absence of adjacency in (4.31), these structures cannot be treated in terms of complex predicate formation, and a solution for apparent  $X^0$  locality violations needs to be found along different lines. This is the issue I turn to next.

## Chapter 5

# Local vs. non-local LVM

As we have seen in the previous chapter, the work by Ackema and Camdzic (2003) leaves open an analysis of those LVM structures where the participle is preposed over non-clitic auxiliaries. Such constructions are characterised by the lack of adjacency effects between the LVM-fronted predicate and the auxiliary, making the ‘complex predicate solution’ unavailable. One of the contentions of the aforementioned work was that LVM-type of predicate preposing over non-clitic auxiliaries had an altogether different kind of derivation from that given for LVM over clitic auxiliaries. In this chapter I would like to develop this idea further. My main claim is that such instances of participle movement should be analysed as remnant phrasal (VP) fronting. However, the analysis to be presented introduces an important modification. According to Ackema and Camdzic (*ibid.*) any kind of participle displacement over clitic auxiliaries is treated uniformly by direct merger and subsequent complex predicate formation. In the analysis developed in this chapter, however, only certain instances of LVM in the context of clitic auxiliaries are analysed in those terms, namely the displacement of the nearest participle across the clitic. The rest of the data i.e. those where the predicate crosses over several verbal head positions are given a remnant movement analysis.

## 5.1 Against head movement analyses of LVM

We have seen in the course of the discussion (chapter 3) that the analyses which assume that all instances of LVM involve head movement have enough empirical problems to justify a search for a solution along different lines. In essence, the problem is that, in order to account for LVM data,  $X^0$  analyses postulate head chains, but then undo (some of) their crucial properties, so that the resulting grammar may parse LVM structures as grammatical. We have seen that without postulating long head movement, or excorporation, and/or other devices to void the locality violation (like permitting head movement over  $X^0$  traces), LVM data cannot be dealt with.

The head movement analyses rest on the argument that LVM has properties typical of head chains, and not obviously associated with XP chains (although not incompatible with them). In particular, the following properties are said to suggest that LVM involves head-chain formation: (i) the fronted participle and the auxiliary must be adjacent (ii) LVM is clause-bound (iii) only the head of the VP fronts, and (iv) LVM and VP topicalisation are in complementary distribution, so that those auxiliaries that allow LVM disallow VP fronting, and vice versa. Moreover, it is also often argued that if LVM was an instance of XP displacement, then it would have to have shared properties with certain other instances of XP chain formation. In particular, we would expect there to be parallels with remnant VP topicalisation as it occurs in Germanic, for instance. Germanic remnant VP fronting, unlike LVM, is not restricted to topicalisation of the verbal head only. It allows for the fronting of larger phrases, including full VPs, and it can displace predicates across clauses. Given all these properties, the ‘LVM as an  $X^0$  movement’ hypothesis seems observationally more adequate than the XP view.

However, there are several issues to be raised here. Firstly, in at least one respect LVM structures do not indicate  $X^0$  chain formation. Crucially LVM across several verbal positions violates the HMC, in its strictest sense. This fact can be taken to

indicate that the head movement hypothesis is wrong, and that we are, in fact, not dealing with head chains. Secondly, the question is whether some similarities between LVM and other known instances of  $X^0$  chain formation, as well as its differences with Germanic remnant VP topicalisation, are grounds on which a decision of the  $X'$ -status of the raised participle can be made. I think that they are not, for reasons indicated below. Thirdly, there are conceptual issues concerning theory building which need to be considered here. Concerning the last point, the reasoning implicit in head movement analyses is that given that some of the properties of LVM can be explained by assuming head chains, the resulting analysis is simpler than a potential XP-chain analysis, which could seemingly not capture the facts in as simple terms. Then, given that simplicity and elegance are the hallmarks of a good theory, it must be the case that an  $X^0$  hypothesis is on the right track.

However, it is not clear whether sacrificing the strict version of the HMC and weakening it to account specifically for LVM is justified by such considerations (presuming that they are correct in the first place and that a head chain analysis is in fact conceptually more appealing than a potential XP analysis). Simplification of one aspect of grammar does not necessarily lead to an overall simpler grammar, if this simplification leads to complications elsewhere. In our particular case, the possible simplification of the analysis of LVM leads to the introduction of complications into the core theoretical principles that ensure the locality of head chains.<sup>1</sup>

Moreover, it is not obvious whether the properties of LVM can and should be captured by postulating head chains. Consider, for instance, the fact that the LVM-

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<sup>1</sup>Even though arguments concerning the elegance and theory building are relevant, the correct statement of the locality principles of head movement is ultimately an empirical issue and should be decided on the basis of the data. There seems to be little empirical evidence (see chapter 3, section 3) to support the modifications of the HMC that are necessary in head-movement accounts of non-local LVM. Moreover, given the pervasiveness of strictly local head movement, the violations of locality exemplified by non-local LVM structures can be taken as evidence *against* treating LVM uniformly in terms of head chains, rather than as evidence for the necessity of modifying locality.

fronted participle and the auxiliary have to be adjacent (only when the auxiliary is a clitic, though). We have seen throughout this thesis that nothing can intervene between the two. This fact is often used as an argument against the long head movement view, which, in principle at least, allows sentential constituents to intervene between the two. On the other hand, this fact is also taken as evidence for clustering, which for Bošković (1995) in particular indicates a head adjunction structure, and therefore represents evidence for the  $X^0$  view. In fact, it turns out that adjacency is forced, quite independently, not by the properties of  $X^0$  adjunction structures which LVM allegedly constructs, but by the second position clitic constraint. The intervention of some other material between the participle and the clitic auxiliary would result in a violation of this constraint, and hence is a priori excluded. In other words, head chains do not do all the work they are intended to do in accounting for all the properties of LVM.

Similarly, it is not clear whether the locality of LVM, in the sense that it is clause-bound, is actually accounted for. This is because LVM is impossible out of some types of clauses that actually do seem to allow for extraction of heads. In particular, in so-called restructuring contexts the lower clause appears to be transparent for movement, including head movement. In fact, restructuring is sometimes argued to involve raising of the main verb to the restructuring predicate (e.g. a modal) (cf. Evers 1975, Kayne 1989, 1991, Rizzi 1982, Roberts 1993b, 1997, Terzi 1996, etc). Nevertheless, in these contexts, too, it is still impossible to extract a participle out of the lower clause by LVM.

The reasoning that deduces from certain properties of a construction that it should be an instance of  $X^0$ -movement (or XP-movement, for that matter), is not really sound in itself. To illustrate this, take for instance the clauseboundedness property of LVM again. We know that head chains are very local, to the extent that they never span clauses (perhaps modulo restructuring). Therefore, we can reason that *if we are dealing with head chains then clause boundedness obtains*. However, the reverse is not

true. We cannot deduce from the fact that some displacement is clause-bound that it involves an  $X^0$  chain. The reason is that there is ample evidence that some XP chains are also strictly clause-bound. For instance, passivisation and other argument-structure changing operations can never relate the object of the lower clause predicate to the predicate of the higher clause (again, modulo restructuring contexts). In other words, that LVM is clause-bounded does not necessarily mean that it involves head-movement, because of the logical truth that from "if A then B" does not follow "if B then A".

Therefore, it is not entirely clear whether LVM provides evidence that modifications of the principles determining the locality of head movement are necessary. I have argued above that, apart from empirical considerations, there are no conceptual grounds for the conclusion that LVM provides evidence against the HMC. I will now try and outline an analysis that avoids postulating non-local head-chains.


## 5.2 Two types of LVM

As noted at the very beginning of the chapter, the main hypothesis advanced here is that not all data which fall under the rubric of LVM are outputs of one and the same operation. Let us call the two types this process *local* and *non-local* LVM (cf. see also the discussion in chapter 1, section 10).


### 5.2.1 Local LVM

Let us first consider local LVM. These structures involve the displacement of the nearest verb across the clitic (or Type 1) auxiliary. They are the only possibility in two verb constructions (5.1a), but just one of the possible configurations in those structures which contain three verbal elements (5.1b).

(5.1) (a)  $[V_2 \ V_1 \ t_2 \ \dots]$

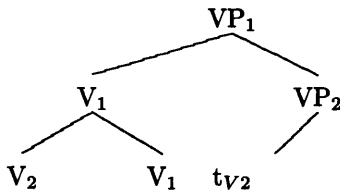


(b) [V<sub>2</sub> V<sub>1</sub> t<sub>2</sub> V<sub>3</sub> ...]



In both (5.1a) and (5.1b) V<sub>2</sub> comes to precede V<sub>1</sub>. Looking at the schematic representations above, it can be observed that there is no intervening verbal head between the base position and the landing site of V<sub>2</sub>. As a matter of fact, under the assumption that V<sub>2</sub> adjoins to V<sub>1</sub>, these configurations can be given an analysis which does not involve a violation of the locality principles on head movement. Thus, the simplest (hypothetical) analysis available would merely state that V<sub>2</sub> leaves its base position and head-adjoins to the clitic auxiliary, giving rise to the configuration in (fig. 5.1). According to this analysis, locality violations do not arise under anyone's conception of locality.

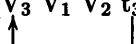
(Fig. 5.1)



### 5.2.2 Non-local LVM


Non-local LVM structures (5.2) come in two subtypes. They are given in (5.2a) and (5.2b). The first type involves the fronting of the lowest participle V<sub>3</sub>, across two verbal head positions, i.e. V<sub>2</sub> and V<sub>1</sub>, where V<sub>1</sub> is a clitic auxiliary. The second type of non-local construction is represented in (5.2b). It involves the fronting of the non-finite verb (i.e. V<sub>2</sub>) across V<sub>1</sub> which is a non-clitic (or Type 2) auxiliary.

(5.2) (a) [V<sub>3</sub> V<sub>1</sub> V<sub>2</sub> t<sub>3</sub> ...]





(b) [V<sub>2</sub> V<sub>1</sub> t<sub>2</sub> ...]



V<sub>1</sub> in (b) is a non-clitic auxiliary

That the two subtypes of non-local LVM constructions in (5.2a and b) should be taken as instances of the same process can be shown on the basis of several properties they have in common. Firstly, they both differ from local LVM in terms of their LF effects. Local LVM does not affect the interpretation of the sentence, while both subtypes of non-local LVM give rise to narrow focus effects on the fronted predicate (see also chapter 1, section 9). Given that focus interacts with interpretation, and hence, should be visible at LF, we may conclude that the two types of LVM differ in their semantic representations.<sup>2</sup>

Secondly, the two subtypes of non-local LVM are interdependent (see also chapter 1, section 10). LVM languages which allow (5.2a) in the context of clitic auxiliaries, also allow (5.2b) across non-clitic auxiliaries, and vice versa. It appears that there are no LVM languages where non-clitic auxiliaries in (5.2b) do not block the movement of the non-finite verb, while V<sub>2</sub> blocks the extraction of V<sub>3</sub> in (5.2a) or the other way around. This state of affairs can be understood if (i) local and non-local LVM involve distinct derivational mechanisms and (ii) if derivations of LVM in (5.2a) and (5.2b) are the same. In the proposals discussed in chapters 3 and 4 (i.e. long head movement, excorporation and complex predicate formation analyses) this generalisation is not captured. Under these views, it is not quite clear why there are no languages where we find local LVM in addition to (5.2a), but to the exclusion of (5.2b), or the other way around: local LVM and the constructions schematically represented by (5.2b), to the exclusion of (5.2a).

Thirdly, both these constructions show locality violations that are unexpected if non-local LVM involves X<sup>0</sup> chains. The deviations from strict locality of head chains

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<sup>2</sup>For a discussion of the interaction of focus and sentential interpretation, and for arguments that focus has to be visible at LF see Gregory (1999), Roth (1996), Steedman (2000) among others.

that (5.2a) and (5.2b) exhibit are different. In the first type of construction  $V_3$  can come to precede a  $[V_1 - V_2]$  sequence of verbs, while in (5.2b), the fronted participle and the auxiliary do not have to be adjacent. They can be separated by material which is predicted not to intervene in head adjunction structures, for instance, as we have seen on several occasions, an overt subject as in (5.3) below.

- (5.3) *Vidjeo Ivana bješe.*  
 seen Ivan-nom had-3.sg  
 ‘He had seen Ivan.’

### 5.3 LVM over clitic and non-clitic auxiliaries

Apart from the similarities listed above, the two types of non-local LVM have a range of differing properties (cf. table 5.1). However, the dissimilarities between the two can be shown to stem from the nature of the  $V_1$ , specifically its clitic status in (5.2a) type constructions vs. its non-clitic status in (5.2b) type of structures.

In particular, the differences between the two are forced by the P2 constraint that determines the distribution of SC second position clitics, but which does not condition the syntax of non-clitic auxiliaries. Consider the following set of facts, already presented in chapter 1, sections 4, 5 and 6, but repeated here. (5.4a) shows that non-clitic auxiliaries may stand clause initially, while the same option is not available to clitic auxiliaries, due to the fact that such structures are ruled out by the P2 constraint (5.4b). (5.5a) illustrates yet again that the LVM-moved verb need not be adjacent to a non-clitic auxiliary. Such configurations are not available in the context of clitic auxiliaries, and presumably they are ruled out in much the same way as all other third position placements are ruled out, namely by the intervention of the P2 requirement. Finally, consider (5.6a and b) which show the differing status of embedded LVM across non-clitic and clitic auxiliaries, respectively. We know independently that embedded topicalisation in the context of clitic auxiliaries is ruled out, since these elements have to attach to the complementizer (cf. chapter 2, section 4.1). The

## 5. Local vs. non-local LVM

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| non-local fronting      | Type 1 aux.'s | Type 2 aux.'s |
|-------------------------|---------------|---------------|
| aux. and part. adjacent | ✓             | *             |
| oblig. sentence initial | ✓             | *             |
| clause bound            | ✓             | ✓             |
| VP fronting             | *             | *             |
| predicate focusing      | ✓             | ✓             |

Table 5.1: Non-local LVM

placement requirements of clitic auxiliaries thus independently make embedded LVM impossible.

- (5.4) (a) *Bješe vidjeo Ivana.*  
           had-3sg seen Ivan-acc  
           ‘He had seen Ivan.’
- (b) *\*Je vidjeo Ivana.*  
           is-cl seen Ivan-acc  
           ‘He has seen Ivan.’
- (5.5) (a) *Vidjeo Ivan bješe Petra.*  
           seen Ivan-nom had-3sg Peter-acc  
           ‘Ivan had seen Peter.’
- (b) *\*Vidjeo Ivan je Petra.*  
           seen Ivan-nom is-cl Peter-acc  
           ‘Ivan has seen Peter.’
- (5.6) (a) *...da vidjeo bješe Ivana.*  
           ...that seen had-3sg Ivan-acc  
           ‘...that he had seen Ivan.’
- (b) *\*...da vidjeo je Ivana.*  
           ...that seen is-cl Ivan-acc  
           ‘...the he has seen Ivan.’

In conclusion, if we factor out the differences that are caused by the P2 constraint, we see that the non-local LVM constructions in (5.2a) and (5.2b) are basically alike, whereas they differ in a number of properties from cases of local LVM. I will argue that the differences between non-local LVM and local LVM can be ascribed to a difference in the  $X^1$ -theoretic status of the fronted predicate. In fact, I shall argue that local LVM is an instance of  $X^0$  movement, while non-local LVM is an instance of XP raising.

### 5.4 $X^0$ vs. XP movement

#### 5.4.1 When is XP movement triggered?

Suppose that it can indeed be maintained that local and non-local LVM are outputs of two distinct processes, local LVM involving  $X^0$  chains, and non-local LVM involving XP-chains. Then, when local LVM is triggered  $X^0$  chain formation takes place, while when non-local LVM takes place the participle moves as a remnant XP. (Of course, in our terms  $X^0$  chain formation should be understood in terms of base generation of the participle above the auxiliary as in Ackema and Camdzic (2003), but we can disregard this issue for the moment and think simply in terms of ‘standard’ head chains).

Note, incidentally, that this state of affairs is such as described by the Pesetsky–Torrego generalisation (5.7), which determines under which conditions attraction of an element will result in the movement of an  $X^0$  vs. the movement of an XP. Head movement can only ever be triggered in a very local relation when attraction is established between a head and its complement. If a head attracts a feature of some XP with which it does not stand in a head–complement relation, only XP movement can take place.

## (5.7) PESETSKY – TORREGO GENERALISATION

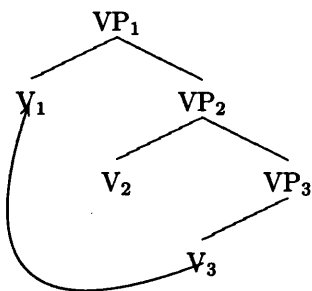
Suppose a head  $H$  attracts a feature of  $XP$  as part of a movement operation, then:

- (i) If  $XP$  is the complement of  $H$ , copy the head of  $XP$  into the local domain of  $H$ .
- (b) Otherwise, copy  $XP$  into the local domain of  $H$ .

Pesetsky and Torrego (2000)

Crucially for our purposes, the Pesetsky–Torrego generalisation implies that  $X^0$  displacement in non-local LVM cannot be triggered. Consider the fronting of the lowest participle ( $V_3$ ) in (fig. 5.2) below. Let us assume for the sake of the argument that LVM of  $V_3$  involves the head-adjunction of  $V_3$  to the head position nearest to its surface position, i.e.  $V_1$ , triggered by some feature of  $V_1$  itself. It seems pretty clear that  $V_3$  cannot be the complement of  $V_1$ , the clitic auxiliary, in the structure underlying this example. Therefore, assuming that the generalisation expressed in (5.7) above is true, XP fronting is the only available option by which the data can be derived, while  $X^0$  fronting is not possible.

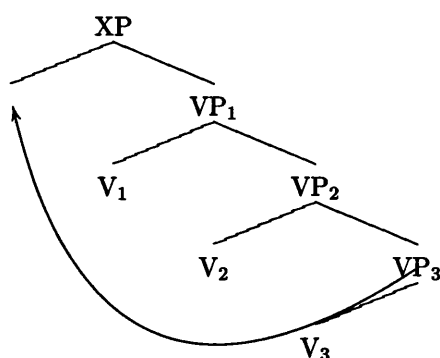
(Fig. 5.2)



In fact, the representation in (fig. 5.2) is simplified. I have assumed that  $V_3$  moves

to  $V_1$  in order to demonstrate that under the most charitable interpretation of the data, the necessary locality conditions as specified by the Pesetsky–Torrego generalisation are not met. As I will argue, a more precise picture will have to posit an additional projection (above the projection of  $V_1$ ) which hosts the fronted participle. That such a projection might be needed is not a novel observation as such (cf. the claim that  $C^0$  is the landing site of the LVM-moved participle in long head movement analyses for instance). Moreover, it is suggested by considerations of non-local LVM over non-clitic auxiliaries, in structures schematically represented in (5.2b) above. As I have noted and illustrated at several points in the discussion, for instance in the example (5.5a), the LVM-moved participle and auxiliary need not be adjacent and sentential subjects may intervene between the two. This suggests that the landing site of the participle is above the position of the subject, the latter constituent presumably occupying Spec-AgrSP. Therefore, a more correct representation of non-local LVM involves the participle landing in some projection which dominates (at least) the canonical subject position. Let us leave the precise identity of this position undetermined for the moment, labelling it simply as XP. We thus arrive at the following picture (fig. 5.3).

(Fig. 5.3)



### 5.4.2 The impossibility of simultaneous $X^0$ and XP movement

Consider the implications of this understanding of LVM data. In particular, consider the possibilities of LVM in combinations of three verbs. Recall the discussion from chapter 1, section 1, where the possible and impossible patterns created by LVM were presented. It was stated that in LVM structures  $V_1$  has to be found in the second position, relative to the order of other verbal elements. The patterns repeated below as (5.8a) and (5.8b) are grammatical. On the other hand, the patterns given in (5.9a) and (5.9b), where  $V_1$  is preceded by  $V_2$  and  $V_3$  in any order and placed in the third position are ruled out.

(5.8) (a)  $[V_2 - V_1 - V_3]$

(b)  $[V_3 - V_1 - V_2]$

(5.9) (a)  $*[V_2 - V_3 - V_1]$

(b)  $*[V_3 - V_2 - V_1]$

Under the view advocated here, we can derive the data in the following way. In the combinations of three verbs there are two possibilities. Either local LVM can take place, giving rise to the structure in (5.8a), or non-local (phrasal) movement of a remnant VP takes place, giving rise to the structures in (5.8b). It might be thought possible that in principle, at least, both local and non-local LVM are triggered in one structure, in which case the structure in (5.9b) would be generated. Here,  $V_2$  would undergo local LVM, while  $V_3$  would undergo phrasal fronting to the specifier of the designated structural position. However, even though such configurations may be generated as far as the derivation of LVM is concerned, they would be filtered out by the P2 constraint. Thus, (5.9b) is ruled out for independent reasons.

Consider now the pattern in (5.9a). The impossibility of such orders has been used as one of the arguments against remnant movement analysis (Borsley and Kathol 1999, here quoted from Roberts forth). The argument rests on the assumed parallel between

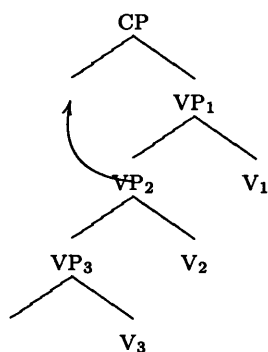
Germanic remnant VP topicalisation and other remnant movement processes. In German, infinitives of a certain type, so-called coherent infinitives, can front by remnant movement in one of several ways: they can front separately from their selecting verb (5.10b), or together with that verb (5.10d). The selecting verb, however, cannot front without its infinitival complement (5.10c).

- (5.10) (a) ...*das Peter das Buch wird<sub>1</sub> finden<sub>2</sub> können<sub>3</sub>*.  
...that Peter the book will find can  
‘...Peter will be able to find the book.’
- (b) *Finden<sub>3</sub> wird<sub>1</sub> Peter das Buch t<sub>3</sub> können<sub>2</sub>*.  
find will Peter the book can  
‘Peter will be able to find the book.’
- (c) \**Können<sub>2</sub> wird<sub>1</sub> Peter das Buch finden<sub>3</sub> t<sub>2</sub>*.  
can will Peter the book find
- (d) [*Finden<sub>3</sub> können<sub>2</sub>*]<sub>j</sub> *wird<sub>1</sub> Peter das Buch t<sub>j</sub>*.  
find can will Peter the book

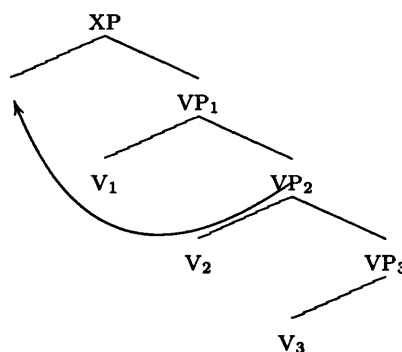
The crucial difference between LVM and Germanic remnant topicalisation concerns (5.10d). The derivation of such patterns involves the extraction of the arguments of the most deeply embedded verb, and then moving the remnant containing  $V_2$  and  $V_3$  to Spec-CP (fig. 5.4a). Controlling for the underlying word order (which in German is OV, whereas it is VO in LVM languages), the parallel derivation in LVM languages would involve the extraction of the arguments to some position higher than  $V_2$ , and then fronting of the [ $V_2 - V_3$ ] remnant (fig. 5.4b). This is, however, as we have repeatedly seen, impossible (5.9a).



(Fig. 5.4a)



(Fig. 5.4b)

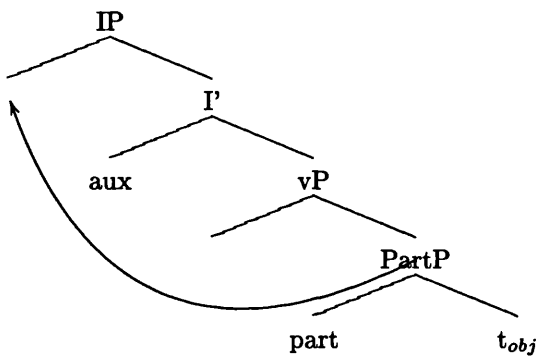


The question is how this hypothetical possibility is to be excluded. Firstly, notice that there is no strong expectation that the derivation in (fig. 5.4b) occurs under the analysis advanced here. The reason is trivial: one of the main claims of this chapter is that only  $V_3$  undergoes remnant movement, while the fronting of  $V_2$  is  $X^0$  displacement. In other words,  $[V_2 - V_3]$  remnants do not legitimately move as a single constituent. However, there is nothing said so far that would actually *prohibit* this kind of remnant VP fronting, and thereby *exclude* the pattern in (5.9a). In section 6.2 of this chapter I will try and outline the reason why (5.9a) should be impossible. But, before I do so, let us consider whether some generalised remnant movement analysis of LVM would prevent the derivation in (fig. 5.4b).

Analyses of LVM in terms of remnant movement are not often proposed. However, Broekhuis and Migdalski (2003) make precisely such a claim. According to Broekhuis and Migdalski, both local and non-local LVM are instances of remnant XP movement. The participle moves to Spec-IP, where it checks its subject agreement features. (Recall that participles are specified for subject agreement in SC and other Slavic languages (chapter 4, section 3.5)). This feature checking process ensures that that LVM-type fronting has to involve PartP only (fig. 5.5). The fronting of a larger

constituent, such that this constituent includes PartP (for instance vP), is ruled out on the basis of the following claim: in ‘larger’ remnants which contain PartP the participle is too deeply embedded for its features to be available for Spec–head agreement in AgrSP. Hence, the derivation will crash.<sup>3</sup>

(Fig. 5.5)



To get the flavour of how this analysis works, consider what the derivation of  $[V_2 - V_1 - V_3]$  patterns involves (5.11). Firstly, it involves the extraction of the DP arguments of  $V_3$  (5.12a).

- (5.11)     *Bila je ubrala kajsije.*  
               $V_2$     $V_1$     $V_3$    obj  
              been is-cl picked apricots  
              ‘She had picked apricots.’

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<sup>3</sup>Broekhuis and Migdalski view LVM across clitic auxiliaries as a Last Resort mechanism. In particular, the idea is very similar to the one argued for by Wilder and Čavar (1993, 1994) (see chapter 2, section 7). The essential claim is that feature checking makes LVM possible, but that it does not *force* it to apply (at least not overtly). The trigger for LVM lies elsewhere. In the context of clitic auxiliaries LVM is forced by their enclitic status. In the context of non-clitic auxiliaries, on the other hand, the trigger is focus.

- (5.12) (a)  $je \quad kajsi_j e_i \quad bila \quad [ubrala \quad t_i]$ .  
 $V_1 \quad obj \quad V_2 \quad V_3$
- (b)  $je \quad [ubrala \quad t_i]_j \quad kajsi_j e_i \quad [bila \quad t_j]$ .  
 $V_1 \quad V_3 \quad obj \quad V_2$
- (c)  $[bila \quad t_j]_k \quad je \quad [ubrala \quad t_i]_j \quad kajsi_j e \quad t_i \quad t_k$ .  
 $V_2 \quad V_1 \quad V_3 \quad obj$

The second step in the derivation of (5.11) involves movement of the remnant containing *ubrala* (i.e.  $V_3$ ) and the trace of the moved object, which is displaced to some higher position (5.12b). This movement creates a structure which is input to the final derivational step i.e. LVM-type fronting of the remnant containing the participle of *to be*, which leads to the desired word order.

Notice that after the extraction of the object DP in (5.12a), the structure from which the impossible (5.9a) could be derived is created. The extraction of the object DP leads to the creation of the remnant containing  $[V_2 - V_3 - t_{obj}]$ . Should this remnant be fronted to Spec-IP the ungrammatical pattern in question would arise. Whether the analysis proposed by Broekhuis and Migdalski can rule out such patterns is not entirely clear. They do not discuss these facts explicitly, and what follows is my extrapolation from the analysis they present.

As I have already noted, Broekhuis and Migdalski argue that ‘bigger’ LVM remnants are excluded by the assumption that in such constituents the subject agreement features of the participle cannot percolate up the positions within the extended domain of the verb, and hence are not available for Spec-head agreement.<sup>4</sup> This, however,

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<sup>4</sup>It is unclear why subject agreement features cannot percolate within the extended projection of the participle. A comparison can be made with the possibility of pied-piping prepositions in cases of wh-movement (as in *On which table did you put the vase?*) where the fact that the wh-phrase is included in a bigger constituent does not block wh-movement. Grimshaw (2003) uses these facts to argue that PPs are extended projections of DPs since the features associated with DPs can be visible on this higher constituent i.e. the features associated with DPs can percolate within their extended projection.

does not account for the ban on PartPs containing more material than their head to be fronted by LVM. For instance, PartPs containing the arguments of the verb, as well as any other material they dominate, in particular lower verbs as in  $[V_2 - V_3 - t_{obj}]$  structures, could legitimately move to AgrSP and still establish the checking relation in that position. The first possibility may be excluded by assuming that argument extraction for agreement checking purposes is obligatorily overt, as Broekhuis and Migdalski suggest. However, the second possibility, as far as I can see, can be excluded by stipulation only. For this ‘generalised’ remnant movement approach to LVM to derive the facts correctly, it needs to be assumed that the extraction of the lower participle out of the remnant headed by  $V_2$  (i.e. the movement step in (5.12b)) is obligatory. However, as things stand, it is difficult to see that it is motivated at all, and not merely stipulated to take place in order to get the data correctly. In absence of a principled explanation for ungrammaticality of  $[V_2 - V_3 - V_1]$  patterns, I shall assume that such patterns cannot be excluded by the ‘generalised’ remnant movement approach.

In this thesis, I will take a different position, and argue that data can be derived with a different set of assumptions, that in my opinion are better motivated. In particular, I will assume that there is a lower bound on the locality of XP movement. This lower bound on the locality of XP movement is given by the Anti-locality Hypthesis of Grohmann (2000). In a nutshell, this hypothesis prohibits XP displacement when it is too local (cf. chapter 3, section 2). In the analysis of non-local LVM proposed below, the Anti-locality Hypothesis will be an essential explanatory mechanism of several properties of this construction: the impossibility of  $[V_2 - V_3 - V_1]$  patterns, the impossibility of full VP fronting in the context of LVM-triggering auxiliaries, as well as the clause-boundedness of LVM will all be shown to be connected to this constraint. However, before we proceed any further a few remarks are in order concerning remnant creation.

## 5.5 Remnant movement

Before proceeding any further in showing how the Anti-locality Hypothesis relates to LVM remnants, we have to discuss the issue of how LVM remnants are created. Non-local LVM depends on the availability of VPs depleted of all constituents other than the verbal head. Under this approach, the VP is either evacuated before the application of LVM, or VPs, at least VPs such as they are standardly assumed, are not generated to begin with. In other words, an XP analysis of LVM can be couched either in terms of remnant movement, or in terms of some of its ‘base generation’ alternatives. Let us consider the options in some more detail.

### 5.5.1 Remnant movement approach

Possibly the best known solution to the issue of incomplete category movement is the remnant movement theory (Bayer 1993, den Besten and Webelhuth 1987, Grewendorf and Sabel 1994, Huang 1993, Müller 1998, 2000, 2001, etc.). It is developed primarily on the basis of Germanic data which involve remnant VP (also PP and AP) topicalisation (5.13)

- (5.13) [*Gelesen*]<sub>1</sub> *hat das Buch keiner t<sub>1</sub>*. GERMAN  
 read has the book no-one  
 ‘No one has read the book.’, Muller (1998:1)

The structure in (5.13) is derived by first *scrambling* the object DP out of the VP, followed by the subsequent movement of the remnant VP to Spec-CP. Scrambling, then, creates the structure in (5.14a), which serves as an input to remnant VP topicalisation (5.14b).

- (5.14) (a) *hat* [<sub>IP</sub> [*das Buch*]<sub>1</sub> [<sub>IP</sub> *keiner* [<sub>VP</sub> *t<sub>1</sub> gelesen*]  
           has     the   book           no-one           read  
       (b) [<sub>VP</sub> *t<sub>1</sub> gelesen*] [<sub>IP</sub> [*das Buch*]<sub>1</sub> [<sub>IP</sub> *keiner t<sub>VP</sub>*  
               read           the   book           no-one

The structures created by remnant movement have the general schema in (5.15). They contain an apparently unbound trace of the element that is moved out of the XP (the trace of  $\alpha$  below). Problematically, the trace is not c-commanded by its antecedent, in violation of *the Proper Binding Condition* (PBC) (5.16), which is designed to exclude illicit cases of downward movement.<sup>5</sup>

(5.15)  $[[\beta \dots t_\alpha \dots] \dots [[\dots \alpha \dots] \dots [\dots t_\beta \dots]]]$

(5.16) Traces must be bound.

In order to include legitimate remnant movement, but exclude illegitimate lowering, it has been argued that remnant movement is best treated in derivational terms and, in fact, constitutes evidence against representational models of syntax (Müller 1998). In representational theories, in order to allow for unbound traces in structures of the form (5.15), the PBC has to be modified. A representational candidate for such a condition may be *the Proper Chain Binding Condition* which includes Barss' (1984) notion of chain binding (Müller 1998: 122).

(5.17) CHAIN BINDING X chain-binds Y iff X and Y are co-indexed, and

- (a) X c-commands Y, or
- (b) X c-commands a trace of Z, where  $Z=Y$  or Z contains Y.

The PBC would then have to be revised to require chain binding instead of simply binding. Thus, for traces to be licensed, the antecedent has to c-command either its own trace, or the trace of the category in which its own trace is included.<sup>6</sup>

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<sup>5</sup>The PBC has been variously argued to hold throughout a derivation (Lasnik and Saito 1992), at S-structure (Fiengo 1977) or at LF (Truckenbrodt 1992). Crucially, none of the formulations can capture remnant movement data (see discussion in Müller 1998, ch. 3).

<sup>6</sup>The revised version of the PBC, on its own, still cannot exclude lowering. For instance, it allows a constituent to be moved to a lower position, and then raised across the intermediate trace. It is clear that additional constraints, perhaps such which require all root positions of the chain to be base generated, would be needed to get the desired outcome.

### **5.5.2 Alternatives to remnant movement**

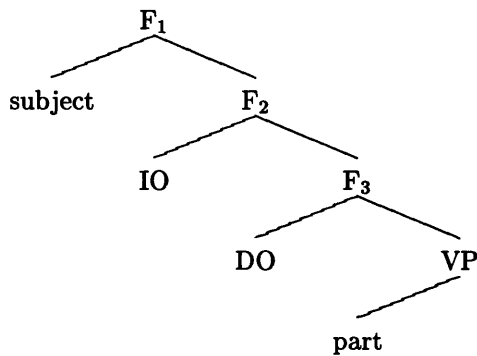
There are several alternative approaches available to the potentially problematic analysis of incomplete category fronting in terms of remnant movement. For instance, we can agree with Fanselow (2001, 2002) that incomplete XPs can be made available directly by merger. Essentially, such an approach involves abandoning the hypothesis that all arguments are initially merged in VP/vP. In principle, the application of Merge is not constrained directly by any grammatical principle, so that different linearizations can be directly generated. Further constraints regulate the well-formedness of such structures, in particular, constraints which determine in which configurations theta-roles can be assigned.<sup>7</sup> Grammar then makes available VP constituents which only contain the head of the VP.

Alternatively, if Borer (2003) is right, then arguments are in fact never generated within the VP. On this view, the merged positions of arguments are within the functional projections of the IP domain (fig. 5.6), in particular specifier positions of different aspectual heads. The verb is merged low in the structure, projecting a VP which only ever contains a minimal amount of material (namely CPs and predicative PPs, which are not obviously associated with higher functional heads). We can remain agnostic as to which one of these theories is most likely to be correct. For the ease of exposition I will from now on assume that this analysis should be couched in terms of remnant movement analysis.

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<sup>7</sup>This position has been outlined and discussed in chapter 4, so I need not go into details here.

(Fig. 5.6)



## 5.6 The Anti-locality hypothesis

As I have discussed in chapter 3, the Anti-locality Hypothesis states that XP constituents cannot move successively from one position of a particular clausal domain to a higher position within that same domain. The sentential domains over which this anti-locality effect is defined are: the domain of theta role assignment (or the domain of 'V'), the domain of agreement (or the domain of 'I') and the domain of discourse information (or the domain of 'C'). As discussed in chapter 3, this derives the impossibility of, for instance, multiple theta-role assignment to two positions of a single chain, hence the ungrammaticality of examples like (5.18). In (5.18), the argument *John* receives two theta roles - Agent and Theme. If such a movement were possible, the end result would come to mean that *John saw himself*. As is well-known, derivations of this type are ungrammatical, a fact traditionally ascribed to the Theta Criterion.

(5.18) \**John*<sub>1</sub> likes *t*<sub>1</sub>.

(5.19) \**[<sub>IP</sub> John ... [<sub>VP</sub> John *v* [<sub>VP</sub> likes John]]*



By the Theta Criterion, an argument may receive only one  $\theta$ -role. Therefore, in traditional terms, the derivation in (5.19) would be ruled out by movement to a  $\theta$ -position and consequent assignment of two  $\theta$ -roles to the same argument chain. However, the Theta Criterion is known to have a number of exceptions. Multiple  $\theta$ -role assignment to a single argument is possible as long as the  $\theta$ -roles do not come from the same predicate (cf. Williams 1994, Neeleman and Van de Koot 2002). This makes the ban on multiple assignment of theta-roles to one argument by the same predicate rather unexpected. The explanation of the ungrammaticality of (5.18) in terms of the Theta Criterion therefore is less satisfactory than an explanation of the data in terms of the Anti-locality Hypothesis, which has other motivation as well (Grohmann 2000). This is not merely for reasons of empirical inadequacy of Theta Criterion. As Grohmann (ibid.) observes, such an explanation misses a significant empirical generalisation, namely that successive movement within all sentential domains (of 'V', as well as of 'I' and 'C') is ruled out (cf. chapter 3, section 2).

The Anti-locality principle may be formally stated as given in (5.20):

(5.20) CONDITION ON DOMAIN EXCLUSIVITY:

An object O in a phrase marker must have an exclusive Address Identification (AI) per Prolific Domain ( $\Pi\Delta$ ) unless duplicity yields a drastic effect on the output.

(i) An AI of O in a given  $\Pi\Delta$  is an occurrence of O in that  $\Pi\Delta$  at LF

(ii) A drastic effect on the output is a different realisation of O at PF

Grohman 2000:61

Note that by the formulation in (5.20), movement within the same 'prolific' domain (i.e. 'V', 'I' and 'C' domains) is allowed only if the two copies of the moved constituent receive a different PF-matrix. Therefore, it would be more precise to say that the Anti-locality Hypothesis is not an absolute ban on intra-domain movement,

but rather a restriction that no dependency may contain two *non-distinct* copies within too close an environment. However, such exceptions to Anti-locality do not concern the discussion in this chapter, and need not involve us any further. For our purposes, therefore, we may regard the Anti-locality principle as an absolute ban on movement from one position in a domain D to another position in D.

### 5.6.1 Small LVM remnants

As we know, LVM remnants have to be small: they can only contain the head of the VP. The fronting of the head together with all, or even some, of its dependents is excluded. Hence the ungrammaticality of the data in (5.21a) and (5.21b) below (see also chapter 1, section 8).

- (5.21) (a) *\*[<sub>VP</sub> Pio vino]<sub>i</sub> je t<sub>i</sub> bio.*  
drunk beer-acc is-cl been  
‘He had drunk wine.’
- (b) *\*Poklonio Petru je bio ploču.*  
given Peter-dat is-cl been record-acc  
‘He had made a gift of a record to Peter.’

Let us suppose that non-local LVM-type fronting displaces a projection of  $V^0$ . The question, then, is what ensures that LVM remnants have to be ‘small’, so that only the participial head and no other overt material is raised by this movement process. Let us first observe that LVM does not displace constituents bigger than VP, for instance some projection that includes the functional categories which are constituent members of the IP domain. If it did, we would expect that other extra-VP material can be pied-piped along with the movement of the participle, contrary to the facts. More problematic for our analysis, however, is the fact that LVM remnants cannot contain apparent intra-VP material either, such as DP, PP, CP arguments and secondary predicates.

## 5. Local vs. non-local LVM

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The answer to this question depends on the background theory of incomplete VP creation that one adopts. In a remnant movement analysis, it would have to be hypothesised that arguments obligatorily scramble, perhaps due to the fact that feature checking is an overt process, as suggested by Broekhuis and Migdalski (2003) in their work on Bulgarian LVM. On the other hand, if Borer (2003) is right, then VPs as standardly understood are not generated in the first place. There is independent evidence that SC, which is underlyingly a VO language (5.22a), allows the scrambling of objects, as in (5.22b).

- (5.22) (a) *Naca je brzo napravila ručak.*  
Naca-nom is-cl quickly make lunch  
'Naca has made some lunch quickly.'
- (b) *Naca je ručak brzo napravila.*  
Naca-nom is-cl lunch quickly made

Notice that while movement that empties the VP of material may be motivated for object DPs, there is a set of cases which is seemingly problematic for this analysis. They concern constituents such as CPs, predicative PPs, and secondary predicates for which it is not entirely clear that they are licensed in higher functional projections.<sup>8</sup> The same problem persists if we understand incomplete VP creation, not in terms of movement, but in terms of base generation. Borer (2003), in fact, suggests that constituents like those just mentioned, unlike object DPs, are base generated within the VP.

Observe, however, that the same problems exist in analyses of Germanic remnant VP topicalisation. In particular, antisymmetry analyses have to assume that all constituent which do not front together with the non-finite verb, including those for which there is no positive evidence that they scramble (for instance CPs) have to be raised to some higher position prior to the application of remnant topicalisation.

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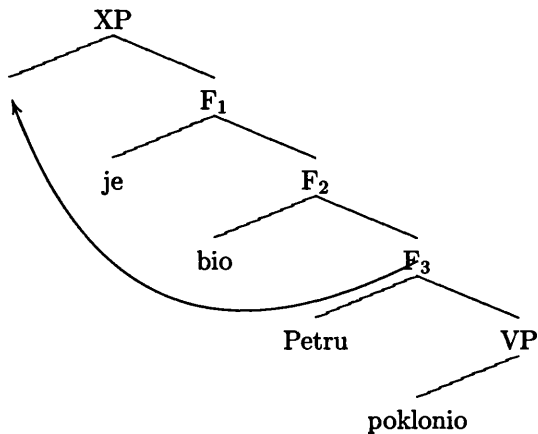
<sup>8</sup>It has been suggested that such constituents, too, check some feature in a projection outside VP, for example secondary predicates are attracted to PredP (cf. Koopman and Szabolcsi 2000).

Additionally, even in OV analyses, the relation between prior movement and remnant VP topicalisation is not straightforward. In OV approaches, two types of movement can lead to the creation of remnant VPs: extraposition and scrambling. However, there still is a residue of cases involving indefinites, adverbs, and predicative PPs, for which evacuating movement is not independently motivated (Müller 1998, Fanselow 2001, 2002) yet, it is clear that remnants can be formed and fronted to Spec-CP that can strand elements such as these as well.

However the incomplete LVM remnants are created initially, either by movement of material out of VP or by base generation, we can understand the impossibility of fronting of 'bigger' constituents than just the VP (so with more material than just the participle) in terms of the Anti-locality Hypothesis. If the LVM fronted XP was a constituent bigger than the projection of  $V^0$ , it would involve the movement of some projection of the IP domain. Let us assume for the moment that the landing site of the LVM-moved participle is within the same (IP) domain. In that case we would have a clear violation of the Anti-locality principle. The displacement of some functional projection to another position within the same domain would be too local, and hence by the Anti-locality Hypothesis in (5.20) above, the derivation would crash.

To make the idea more concrete, consider a possible derivation of (5.21b). Prior to the application of LVM, both the indirect and direct object are in some functional projection outside the VP. Therefore, the starting point is as given in (fig. 5.7). To get the required word order, the participle would have to move to some position above the position of the indirect object, either by substitution into some functional head position or by remnant VP movement, but we may disregard this step since it does not influence the argument made here. The point is that the movement of the verb with one of its arguments (the undesirable 'LVM plus pied piping' step) has to involve the raising of a functional projection ( $FP_3$  in fig. 5.7) of the IP domain to a position within the IP domain, and this movement is a violation of the Anti-locality principle. Hence, such a derivation is excluded.

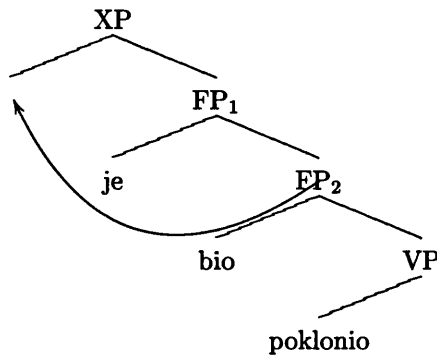
(Fig. 5.7)



### 5.6.2 The impossibility of $[V_2 - V_3 - V_1]$

Let us now go back to the impossibility of the  $[V_2 - V_3 - V_1]$  word order. This pattern is excluded along the same lines as the fronting of bigger verbal projections than bare VPs. Let us assume again that the landing site of LVM is within the IP domain (I shall return to this point shortly, and try to motivate this assumption). The fronting of the constituent which contains the  $[V_2 - V_3]$  sequence of verbal heads would also involve the movement of a phrase projected within the IP domain, as this phrase must be at least so big as to include  $V_2$  i.e. the participle 'been'. Thus, this possibility too is ruled out by Anti-locality. Consider the derivation of such patterns:

(Fig. 5.8)



The derivation in (fig. 5.8) clearly parallels the derivations given in (fig. 5.7). The participle of *to be* contributes to the tense interpretation of the sentence, and as such it has to be either merged (or raised) into the functional position it is associated with. Here I label it as  $F_2$ , abstracting away from its precise identity. What is relevant for the moment is, again, that the movement of  $FP_2$  is prohibited since it would be too local.

### 5.6.3 VP fronting and LVM

If this analysis is on the right track, then LVM cannot involve fronting of the verb together with all or some of its arguments. Indeed, although full 'VP' fronting exists, it has a range of properties which set it off from LVM. Most importantly (i) it is not licensed in the same contexts as LVM and (ii) it is not clause-bound. Note that there is no a priori reason to expect that the displacement of full VPs will parallel the displacement of remnants. As a matter of fact, looking at Germanic incomplete VP topicalisation data, differences between the two emerge. Remnant VPs cannot be found in the full set of configurations in which full VPs can be found. For instance, while full VPs in German can be extraposed and scrambled, their remnant

counterparts cannot undergo these movement types (Müller 1998: ch. 5).

According to the analysis advocated here, complete VP fronting in (5.21a) (i.e. nonlocal LVM of the verb plus all of its dependents) also has to involve fronting of a projection within the IP domain to the IP domain and hence, it is ruled out. Looking at SC data there is no positive evidence that the raising of the complete constituent has to involve raising from within the IP domain. However, there is a piece of evidence for this position from Breton (Roberts forth). Consider the following data:

- (5.23) *[VP O lenn al levr] a ouian emañ Yann.* BRETON  
PROG read the book PRT know-1sg is Yann  
‘I know Yann is reading a book.’ Roberts, forth

The fronted VP in (5.23) contains the aspectual particle *o*, suggesting that the fronted constituent is not a VP, but some bigger phrase, namely AspP headed by the progressive particle. If it can be maintained that complete VP fronting is movement of a projection headed by a functional category as the data above seem to suggest, then full VP fronting cannot target the same position as LVM. In fact, because of anti-locality it cannot target any projection within the IP domain at all. This means that it has to involve movement to Spec-CP (or to some position contained within the CP domain) or possibly base generation within that domain. That this is in fact so is suggested at least by the extraction possibilities of full ‘VP’s. Full VP fronting, unlike LVM, is an unbounded process which can displace the relevant constituents across clausal boundaries. An example is given in (5.24).

- (5.24) *Poveo Milenu u Brazil, mislim da je Milan.*  
taken Milena-acc in Brazil think that is-cl Milan-nom  
‘I think that Milan took Milena to Brazil.’

Within Minimalism and its predecessors, the possibility of apparently unbounded extraction is generally taken to depend on movement via (the edge of) the CP domain (empirical evidence of such successive cyclic movement has been discussed by Torrego (1984), Chung (1994), and McCloskey (2001), among others). Constituents cannot be

extracted directly from the IP domain of finite clauses out of such a clause, but first have to reach the edge domain, from where they can target the edge (CP domain) of the next clause up. The data in (5.24) therefore suggest that this edge is accessible to complete VPs.

If it can be maintained that full 'VP' fronting and LVM are movements that target positions belonging to two distinct clausal domains, namely CP and IP respectively, then we can explain away the relevant data.

#### **5.6.4 The clause-bound nature of LVM**

The assumption that we have been making so far, namely that LVM targets some IP internal position, also accounts for the clause-bound nature of this movement process. As noted before, LVM-moved non-finite verbs cannot leave the extended projection of the auxiliary they are associated with. This generalisation applies both to local LVM and non-local LVM. In relation to non-local LVM in particular, we can observe the ungrammaticality of (5.25) (which should be contrasted with (5.24) above).

- (5.25) \*/??? *Poveo mislim da je Milenu u Brazil.*  
taken think that is-cl Milena-acc in Brazil  
'I think that he has taken Milena to Brazil.'

As noted in the previous section, for unbounded extraction to take place, sentential constituents have to move through the domain of 'C'. If this domain is inaccessible to them, then their displacement will remain local (i.e. clause-bound). In other words, the same assumption that accounts for other properties of LVM remnants - i.e. the assumption that they target an IP internal position, also accounts for the clause-bound nature of LVM.

Note additionally that even if the domain of 'C' were accessible to the LVM-moved participle, LVM to a higher clause would be an instance of 'improper' movement of A-to-A'-to-A position. In general, all movement from a source position within a



domain D to a position within a domain below D in the higher clause is ruled out.<sup>9</sup> If extraction out of a clause has to proceed via the domain of 'C', it can only target the same domain of the higher clause. Since LVM to a higher clause would actually involve movement to the domain of 'I' such displacement would be an instance of improper movement and is, hence, ruled out.

## 5.7 The landing site of LVM remnants

Consider the data below. In the (a) example, the participle is displaced across an overt sentential subject, which I will take to be in Spec-AgrSP. The (b) example, on the other hand, shows the possibility of embedded LVM.

- (5.26) (a) *Otišao Ivan bješe kući.*  
           gone Ivan-nom had home-loc  
           'Ivan has gone home.'
- (b) ... *da otišao bješe kući.*  
       ...that gone had home-loc  
       'That he had gone home.'

The two examples above taken together suggest that the landing site of the participle is some position projected below the position of the complementiser ( $C^0$ ), but above the position of the sentential subject. What could this position be? Given the focused interpretation of the participle, let us make the intuitively plausible assumption that the landing site of the LVM-type remnants is FocP.

That SC can have FocP projected between CP and AgrSP, as suggested above, has been argued for on independent grounds. Most of the arguments come from the syntax of wh-phrases (cf. Stjepanović 1995, Bošković 1997a, 2002). SC is a language with multiple wh-fronting, meaning that all wh-elements (bar the D-linked ones) have to be fronted (5.27a). Should any wh-phrase remain in situ, ungrammaticality ensues (5.27b and c).

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<sup>9</sup>See Williams (2003) for a particularly interesting 'timing' explanation of improper movement.

- (5.27) (a) *Ko je koga gdje vidjeo?*  
 who is-cl whom where seen  
 ‘Who has seen whom where?’
- (b) *\*Ko je koga vidjeo gdje?*  
 who is-cl whom seen where
- (c) *\*Ko je gdje vidjeo koga?*  
 who is-cl where seen whom

According to the classic work on the subject (Rudin 1988), only the first of the wh-phrases in (5.27a) above is placed in Spec-CP, the others are adjoined to Spec-IP (5.28). This analysis is supported by the fact that wh-phrases in SC do not form a cluster. A set of sentential elements can intervene between them, including clitics as illustrated in (5.27) and (5.28).<sup>10</sup>

- (5.28) [<sub>CP</sub> *Ko* [<sub>C</sub> *je* [<sub>IP</sub> *koga* [<sub>IP</sub> *gdje* [...*vidjeo*]]]]]?  
 who is-cl whom where seen  
 ‘Who has seen whom where?’

The analysis of wh-fronting in SC pursued by Bošković (ibid.) and Stjepanović (ibid.) differs from Rudin’s in several respects. Most importantly for our purposes, they argue that wh-fronting should be understood as focus movement driven by the presence of a focus feature on wh-phrases, as suggested by Horvath (1986) for a number of languages. This work makes a connection between the displacement of wh-phrases and contrastively focused non-wh elements, such that both kinds of constituents undergo the same kind of movement. As a first approximation, let us say that for Bošković and Stjepanović, the wh-phrases which in Rudin’s analysis are adjoined to Spec-IP in (5.28) above are moved to the focus position. This focus position also hosts non-wh focused constituents as in (5.29).

- (5.29) *JOVANA je vidjeo.*  
 Jovan-acc is-cl seen

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<sup>10</sup> Apart from clitics, non-clitic material, such as adverbs, can break up the sequence of wh-phrases.

‘He had seen JOVAN.’

In fact, Bošković departs from Rudin’s analysis in another crucial respect. For him, in a well defined set of environments, no *wh*-element moves to Spec-CP. Instead, all *wh*-phrases (including the first one) move to the focus position. The contexts in which only focus movement is triggered are those characterised by the absence of Superiority effects. They are consistently lacking in matrix clauses without an overt complementizer. Thus, any permutation of *wh*-phrases in (5.30) is acceptable, provided that all of them are raised and none of them remains in situ. On the other hand, matrix clauses with an overt complementizer or a topic constituent, as well as embedded and long distance questions do show Superiority effects (Bošković 1997b, 2002). In these environments, as illustrated in (5.31) for a matrix clause with a topic constituent, only the highest *wh*-element may come to occupy the highest position, i.e. the relative order of phrases has to be respected.

(5.30) (a) *Ko je koga vidjeo?*  
 who is-cl whom seen  
 ‘Who saw whom?’

(b) *Koga je ko vidjeo?*  
 whom is-cl who seen

(5.31) (a) *Tom čovjeku, ko je šta dao?*  
 that man-dat, who is-cl what given  
 ‘To that man, who gave what?’

(b) *??Tom čovjeku, šta je ko dao?*  
 that man-dat, what is-cl who given

For Bošković the structures showing Superiority effects and those which are devoid of them have different underlying structures. The crucial difference is that in the former the highest *wh*-phrase moves to CP, while the lower one(s) are fronted for focus. On the other hand, constructions which show the absence of Superiority involve a wholesale focus movement.

There are several arguments for the presence of FocP at the left periphery of the IP domain. Stjepanović (*ibid.*) argues for this position on the basis of adverb distribution. Bošković (*ibid.*) shows that the focus analysis of multiple *wh*-fronting in SC can account for the fact that only non-D-linked *wh*-phrases undergo obligatory fronting. D-linked ones, being associated with a discourse given set of felicitous answers are not focused, and hence are not endowed with [+FOC] feature which would induce their obligatory fronting. Additionally, taking focus movement to be the driving force of the raising of all *wh*-elements in root contexts, the lack of Superiority effects can be explained. The argument, in a nutshell, is that the presence of an overtly projected CP forces Superiority effects. On the other hand, its absence implies the lack of them. The argument is somewhat involved and I will not review it here (see Bošković 1997b).

### 5.8 Non-local LVM and blocking effects

Let us now consider how we can deal with the fact that certain elements induce a blocking effect on remnant LVM. Recall that the elements in question are the following: (i) (non-focused) subjects, (ii) sentential adverbs, (iii) the question particle *li*, and (iv) negative and emphatic auxiliaries. The blocking effect induced by sentential adverbs is problematic for current analysis, and I defer a discussion of this problem to later sections. I will first show how the blocking effects of the other elements can be dealt with.

#### 5.8.1 The blocking effect of subjects

The blocking effect of subjects is absent in non-local LVM constructions. We have repeatedly seen that the LVM-moved participle can cross over an overt non-focused subject (cf. data in chapter 1, section 7.1). Such structures are possible only in the context of non-clitic auxiliaries. However, when  $V_1$  is a clitic, they are excluded solely

because [participle – subject – clitic] represents a violation of the P2 constraint. Non-local LVM over subjects was discussed in section 3 of this chapter, and at this point I will not elaborate on it any further.

### 5.8.2 The clitic *li*

Recall that the second position clitic *li* is a homophonous item with dual use: it can function as a question particle, but also as a focusing particle (chapter 1, section 7.3). The question particle is used in the formation of both *yes/no* and *wh*-questions and it blocks LVM. The focusing particle, on the other hand, marks the constituent immediately preceding it as focus, and does not block LVM. Hence, we get the following minimal pair with respect to the possibility of participle fronting. They differ not only in their grammaticality status, but also in their interpretations. Should the participle front over the question particle, with the resulting *yes/no*-question interpretation, the result is bad (5.32a). On the other hand, the fronting of the participle over the focusing *li*, with concomitant narrow focus on the participle, results in a well-formed structure (5.32b).

- (5.32) (a) \**Vidjela li si bila Milana?*  
           seen     Q   are-cl   been   Milan-acc  
           ‘Have you seen Milan?’
- (b) *VIDJELA li si bila Milana!*  
           seen       FOC   are-cl   been   Milan-acc  
           ‘You have SEEN Milan!’

The question is how to account for this difference? Let us first consider the blocking effect of the question particle. It is usually assumed that question particles such as *li* are merged as the head of CP node. The finite verb in *yes/no* questions head-adjoints to it, thereby creating a checking configuration in which the uninterpretable [+Q] feature may be deleted (5.33). Crucially, the question particle *li* triggers a movement of a tensed element (there is no evidence whatsoever that question formation ever

involves the raising of untensed items). In other words, question *li* does not actually block remnant LVM, but the LVM-moved participle cannot appear in front of the tensed auxiliary in this context because it is never licensed to target Spec-CP.

- (5.33) *Želiš li ga vidjeti?*  
 want Q him-cl.acc see-inf  
 ‘Would you like to see him?’

An alternative strategy for *yes/no*-question formation is to merge a strong form of the question particle *dali*. In this case no syntactic movement need take place (5.34a). In fact, the fronting of the finite verb is blocked (5.34b). Notice that the movement of the finite verb to C<sup>0</sup> thus is related to clitic vs. non-clitic status of the question particle. However, it would be incorrect to argue on the basis of this difference that the finite verb moves in order to satisfy the requirements of the clitic – i.e. its need for a phonological host solely. (To be sure the fronted verb also satisfies the phonological requirements of the clitic question particle, and the second position constraint to which it is subjected.) If cliticisation was the only consideration, however, we might expect that a whole range of different constituents may come to precede the question particle, contrary to the facts. We know that SC pronominal and auxiliary clitics are very unselective in the choice of their host, any phonologically strong constituent being able to serve for this purpose. The question particle *li*, on the other hand, may be preceded by the finite verb only. This fact suggests that in addition to phonological requirements, the question particle comes with a specific formal feature (i.e. [+Q]) which triggers finite verb raising. In case non-clitic form of the question particle is merged, this V-raising can be postponed to covert syntax because of the absence of 2P-clitic effects in this case.

- (5.34) (a) *Dali ga vidiš?*  
 DALI him-cl.acc see  
 ‘Do you see him?’  
 (b) *\*Vidiš dali ga?*  
 see DALI him-cl.acc

The absence of blocking effects in the context of the focusing particle is straightforwardly accounted for under the remnant movement analysis argued for here. The only required assumption is that the focusing particle occupies a lower structural position compared to that occupied by the question particle, as suggested by Bošković (1995). It seems plausible to assume that the focusing particle is merged as the head of FocP. Spec-FocP can host a variety of constituents, such as most fronted *wh*-phrases, as well as other non-*wh* material that carries focus, as we have seen in section 7 of this chapter. The hypothesis defended here is that, amongst other constituents, it also hosts the remnant VPs fronted by non-local LVM. The derivation of LVM patterns in the context of the focusing particle therefore follows the general schema discussed in the earlier sections of this chapter and involves no surprises.

It needs to be pointed out that this implies that any fronting of the non-finite verb across the focusing particle is an instance of remnant VP movement. That is to say that the derivation of apparently local LVM patterns ( $[V_2 - V_1]$  where  $V_1$  is a clitic auxiliary), as well as non-local LVM patterns, involves remnant movement in the context of the focusing particle. In other words, the patterns of the type  $[V_2 - li - V_1]$ , as illustrated in (5.35) are predicted to be instances of non-local LVM. This is further corroborated by the following considerations. Firstly, local LVM (i.e.  $X^0$  displacement of the participle) in general does not give rise to any focusing effects, and hence should be incompatible with the presence of the focus particle. Secondly, an  $X^0$  movement derivation is ruled out by the HMC. The derivation of (5.35) by head movement would involve skipping (at least) the  $V_1$  head in standard movement analyses.

- (5.35) (a) *VIDJEO li si ga!*  
           seen       FOC are-cl him-cl.acc  
           ‘You have SEEN him!’
- (b)  $[V_2 - li - V_1 - t_2]$

## 5. Local vs. non-local LVM

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The derivation of (5.35) in the complex predicate analysis of local LVM which I am assuming, is excluded by the Head Adjunction Principle (chapter 4, section 3.2). For head-adjunction to proceed, the source positions of the two heads have to be immediately adjacent. The intervening focusing particle thus blocks the complex predicate formation which hinges on the adjacency between  $V_1$  and  $V_2$ . The analysis of local LVM outlined in chapter 4, therefore, does not allow for the derivation of these patterns, and predicts that they are derived by an altogether different mechanism.

The remnant movement derivation of (5.35) proceeds in the same way as the derivation of other non-local patterns. Briefly, remnant fronting is preceded by the extraction of all the arguments of the verb and their movement to the associated agreement positions. Subsequently, the VP containing only the non-finite verb, and marked with a [+FOC] feature is raised to the specifier of FocP.

Finally, notice that the remnant movement analysis correctly rules out the ungrammatical patterns in (5.36). They involve the fronting of the functional participle (i.e.  $V_2$  in three verb constructions) across the focusing particle. This movement is disallowed by the Anti-locality Principle. Suppose that the required 'evacuation' movements take place. Firstly, the arguments are moved out of the VP containing  $V_3$ , and subsequently the VP is raised to some position above  $V_2$ . This last movement has the effect of creating a remnant containing an overt head  $V_2$  and the traces of all other constituents that the projection of this head dominates. Even though the required remnant may be created in this way, it would not be able to move from its base position within the domain of 'I' to another 'I'-domain position such as FocP.<sup>11</sup>

- (5.36) (a) \**Bila li si vidjela Milana!*  
           been FOC are-cl seen Milan-acc  
           'You HAD seen Milan!'

- (b) [ $V_2 - li - V_1 - t_2 - V_3$ ]

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<sup>11</sup>It is quite possible that (5.36) is additionally excluded because of semantic considerations, the focus on the functional element being awkward. However, even though (5.36) may be semantically excluded, it is by no means the case that such patterns cannot be syntactically ruled out as well.



### 5.8.3 Negative and emphatic auxiliaries

Consider next the blocking effect of negation and emphatic auxiliaries on non-local LVM. I follow Laka (1990) in assuming that negation heads a functional projection  $\Sigma$ P in the clause. The question, then, is whether FocP can be present in the same structure as  $\Sigma$ P, or whether they are mutually exclusive. If the latter holds, negation and non-local LVM cannot occur in the same time.

The incompatibility of the simultaneous occurrence of  $\Sigma$ P and FocP in a single clause looks plausible when we consider emphatic auxiliaries. Recall that emphatic auxiliaries are the full forms of clitic auxiliaries, and that they are licensed only in emphatic contexts, where they receive focus, and where (presumably) because of the focusing effects, clitic auxiliaries cannot occur. Consider the interpretational difference between the following two examples.

- (5.37) (a) *Ivan je (\*jeste) otišao u školu.*  
Ivan aux-cl.3sg (\*jeste) gone to school  
‘Ivan has gone to school.’
- (b) *Ivan JESTE (\*JE) otišao u školu.*  
Ivan-nom HAS (\*CL) gone to school  
‘Ivan HAS gone to school.’

In (5.37a), which is a sentence in broad focus, only the clitic is licensed, and the full auxiliary cannot be present. In (5.37b) however, where the auxiliary carries emphatic intonation, and expresses narrow focus, only the emphatic auxiliary can be used, and the clitic is excluded. I think that the same line of reasoning may carry over to negative contexts. Here, negation is pronounced with focus pitch, so presumably acts as a locus of sentential focus, ruling out the focus related movement of the non-finite verb by non-local LVM.

## 5.9 Remaining problems

### 5.9.1 The blocking effect of sentential adverbs

Recall that LVM is blocked in the presence of sentential adverbs (cf. data in chapter 1, section 7.2). This generalisation applies to local as well as the non-local type of fronting. Sentential adverbs can only be present in LVM constructions and take broad scope when they are offset from the rest of the clause by parenthetical intonation (compare 5.38a and 5.38b).

- (5.38) (a) \**Otišao vjerovatno bješe kući.*  
          gone       probably   had-3sg   home  
          ‘He had probably gone home.’
- (b) *Otišao # vjerovatno # bješe kući.*  
          gone       probably   had-3sg   home

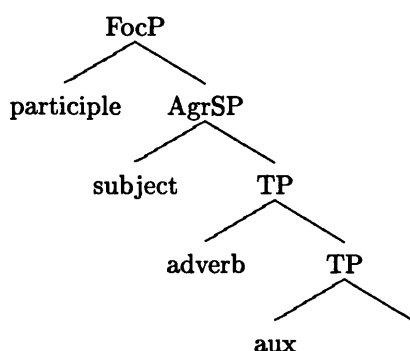
The impossibility of sentential adverb placement can be observed in cases of non-local LVM across a clitic auxiliary, in three verb constructions (5.39a). In these contexts, however, the derivation cannot be saved by introducing the adverb as a parenthetical, since the clitic would be placed immediately after a pause. The phonological requirement of encliticisation could not be met, resulting in ungrammaticality (5.39b).

- (5.39) (a) \**Otišao vjerovatno je bio kući.*  
          gone       probably   is-cl   been   home  
          ‘He had probably gone home.’
- (b) \**Otišao # vjerovatno # je bio kući.*  
          gone       probably   is-cl   been   home

For local LVM, the blocking effect of sentential adverbs has a straightforward explanation, as argued by Ackema and Camdzic (2003). Sentential adverbs intervene in the formation of the complex predicate consisting of the participle and the auxiliary because they linearly intervene between the two verbs.

However, it is much less clear how to rule out (5.38a), or its equivalents in three verb constructions (5.39). The position in which the adverbs are merged is lower than the position that hosts LVM remnants (i.e. FocP). Sentential adverbs follow subjects, and we have already seen that the landing site of non-local LVM is higher than the subject position. As shown by (5.26a), subjects can intervene between LVM remnants and the auxiliary in non-local LVM fronting across non-clitic auxiliaries (cf. fig. 5.9). Structurally, at least, there is no reason why (5.38) cannot obtain.

(Fig. 5.9)



Notice that in three verb constructions, where the participle fronts across the clitic auxiliary, an appeal to the second position constraint cannot be evoked in order to account for the ungrammaticality of the patterns in question for additional reasons. Auxiliary clitics can be spelled out in a position above the position of sentence adverbs as in (5.40). Hence, the second position constraint can be satisfied if the clitic is spelled out in  $\text{AgrS}^0$ , immediately following the LVM-moved participle (cf. 5.40b). That is to say that apart from (5.39a and b), where the clitic is lower than the intervening sentential adverb, (5.40a) should be possible, given the grammaticality of the (b) example.

- (5.40) (a) \**Otišao je vjerovatno bio kući.*  
 gone is-cl probably been home  
 'He had probably gone home.'
- (b) *Milan je vjerovatno bio otišao kući.*  
 Milan-nom is-cl probably been gone home.  
 'Milan had probably gone home.'

This blocking effect of sentential adverbs clearly is problematic for an analysis of non-local LVM in terms of remnant movement. I shall leave the problem open. However, let me point out that this analysis predicts (if it is on the right track) that the solution has to involve not the considerations of the landing site of the participle, but some other extraneous mechanism, which is as yet unfortunately unclear.

### 5.9.2 LVM in restructuring environments

An additional problem for the analysis presented here involves non-local LVM across restructuring predicates. Recall the data introduced in chapter 1, section 3, where it was observed that LVM is a strictly local process, which cannot escape clausal boundaries. Problematically, this clause-bound nature of non-local LVM extends to restructuring environments. The infinitival complements of the restructuring verbs (in SC typically modal and semi-modal verbs like 'to want', 'to intend to', etc.) cannot front over the verb they are selected by (5.41a). The restructuring verbs themselves, however, can undergo local LVM. Hence the grammaticality of (5.41b).

- (5.41) (a) \**Svirati je željela klavir.*  
 play-inf is-cl wanted piano  
 'She wanted to play the piano.'
- (b) *Željela je svirati klavir.*  
 wanted is-cl play-inf piano

A property of restructuring environments is that they extend the domain of processes which are otherwise restricted to the domain of a single predicate. For instance

in languages with clitic systems, clitics typically cannot leave the domain of the verb they are associated with, but remain trapped within it. Extraction results in sharp ungrammaticality. Taking SC as an example, pronominal clitics cannot be extracted out of the finite clause (5.42a). However, in restructuring environments, where clitics are arguments of the complement of the restructuring verb, they can undergo movement to the extended projection of the higher predicate (5.42b).

- (5.42) (a) \**Mislila sam ga<sub>i</sub> da t<sub>i</sub> je vidjela t<sub>i</sub>.*  
           thought am-cl him-cl.acc that is-cl seen  
           ‘I thought that she had seen him.’
- (b) *Željela sam ga<sub>i</sub> vidjeti t<sub>i</sub>.*  
       wanted am-cl him-cl.acc see-inf

In fact, in SC clitic climbing out of infinitival complements of the restructuring verbs is an obligatory process.<sup>12</sup> Clitics cannot remain within the domain of their selecting verb, but have to move across the restructuring predicate. Compare the grammatical (5.42b) with its ungrammatical counterpart (5.43) where the clitic remains in situ.

- (5.43) \**Željela sam vidjeti ga.*  
       wanted am-cl see-inf him-cl.acc  
       ‘I wanted to see him.’

Given that clitic climbing is an obligatory process as in (5.43), what we get in restructuring environments is an instance of the creation of incomplete VPs par excellence. Yet, the displacement of these remnant VPs is prohibited. However, in contrast to LVM, full VP fronting is possible in these contexts (5.44).

<sup>12</sup>Apart from clitic climbing, restructuring verbs in SC extend the domain of negative polarity items licensing which is otherwise clause bound (see Progovac 1993, 1994 for a detailed discussion of this issue). They also allow for much more liberal extraction possibilities than those found in finite clauses. Stjepanović (n.d.) argues that SC allows for the formation of so-called *long passives* in these contexts. Long passives involve movement of an object of the complement verb to the subject position of the restructuring verb. Argument changing operations, like passivisation, are normally strictly restricted to the extended projection of their selecting predicate.

- (5.44) *Svirati klavir je uvijek željela.*  
 play-inf piano is-cl always wanted  
 ‘She has always wanted to play the piano.’

This suggests that there is a fundamental restriction on the processes which can affect remnant VPs and full VPs. Full VPs can be topicalised, and topicalisation is not clause bound. Remnant VPs cannot be displaced in the same way, and cannot leave the domain of their own extended projection. These facts are independent of one’s particular view of LVM and hold on an observational level regardless. Therefore, they represent a puzzle which transcends the context of this discussion. I shall leave it as an open question, and a topic for further research.

## 5.10 Conclusion

The main hypothesis of this chapter is that LVM data of the type  $[V_3 - V_1 - V_2]$ , as well as  $[V_2 - V_1]$  where  $V_1$  is a non-clitic auxiliary, are derived by remnant VP movement. The analysis proposed rests heavily on the research reported in Grohmann (2000) which, on the basis of a wide set of data, formulates and formalises the important anti-locality generalisation. Anti-locality specifies the lower bound on the locality of syntactic dependencies, and states (simplifying somewhat) that syntactic movement cannot take place between two positions within the same sentential domain. A natural extension of this generalisation to all instances of phrasal movement, states that a projection which is a constitutive member of a given domain  $D$  cannot be copied and then re-merged in a higher position within the same domain  $D$ , since such displacement would incur the violation of anti-locality. This applies to remnant, as well as non-remnant XPs.

On this view LVM remnants are ‘small’ out of necessity. LVM targets a position within the domain of ‘ $T$ ’. Hence, it cannot be a displacement of a constituent bigger than VP (or higher than vP under the assumption that this is the highest position within the ‘ $V$ ’ domain). LVM, then, contrasts with well-known Germanic remnant

## **5. Local vs. non-local LVM**

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VPs, which are typically bigger constituents, although perhaps not necessarily so in all cases. Suppose once again, that it can be maintained that arguments are obligatorily extracted to (or perhaps merged within) the IP domain. Then, Germanic remnant VP topicalisation involves the movement from IP domain. As such, it can only target a position within the higher (i.e. C) domain. Given that Germanic remnants move to the domain of 'C', they can be extracted across clausal boundaries, in contrast to LVM. Whether such a view of remnant movement can be maintained is a matter for further research.

## Chapter 6

# Conclusion

The main hypothesis I have been assuming throughout this thesis is that the locality constraints governing head movement type displacements are not violable. This hypothesis leads to the reconsideration of the previous analyses of LVM data, according to which LVM is an instance of non-local head movement. On the basis of their differing properties, I have distinguished two types of LVM constructions: local and non-local LVM. I have argued that local LVM constructions can be given an analysis which does not assume a violation of the HMC. For non-local LVM constructions, such an analysis seems unavailable. Moreover, given the empirical considerations, it seems undesirable as well.

Through this thesis, I have based my discussion on SC. However, this is just one of the languages with LVM. The rest of the group are languages as different as Breton, Bulgarian and Old Spanish. In addition, given the striking similarities between LVM and Stylistic Fronting (SF) constructions found in modern Icelandic and Faroese, we could be justified in considering LVM and SF as one and the same phenomenon. The question, then, is whether an analysis along these lines could be carried over to other LVM (and SF) languages.

Let us first observe, that the analysis presented in chapter 5 predicts that the



## 6. Conclusion

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crosslinguistic variation found in LVM and SF constructions should be recast in terms of the possibility vs. impossibility of head/remnant movement. I have observed several times in the course of my discussion that the patterns possible crosslinguistically may be one of the following types: all the LVM languages in question have the pattern (6.1a). If we include SF into the consideration, Icelandic is the only counterexample. Not all languages have (6.1b). Czech, certain dialects of SC, Old Spanish and 19th century Portuguese are such languages. The patterns in (6.2) are universally ruled out. Finally, note the ungrammaticality of (6.3). This pattern should be taken to stand for the impossibility of clause initial placement of LVM triggering auxiliaries. Seemingly all the languages under consideration have grammatical requirement such that verbs cannot stand clause initially. However, (at least most of the) languages with non-local displacement also have truly optional fronting of non-finite verbs.

(6.1) (a)  $[V_2 V_1 V_3]$

(b)  $[V_3 V_1 V_2]$

(6.2) (a)  $[*V_2 V_3 V_1]$

(b)  $*[V_3 V_2 V_1]$

(6.3)  $*[V_1 V_2 V_3]$

The analysis presented in this thesis implies that in all the languages above (modulo minor variation) the small LVM/SF remnants should be VPs, targeting some position within the domain of I. It is a question whether this can be maintained. For instance, the standard analysis of V2 postulates that the finite verb moves to  $C^0$ . Hence, everything that precedes it, including LVM fronted verbs should be within the domain of C. This raises issues concerning LVM in Breton, where the second position constraint restricts the distribution of non-clitic finite verbs. So whether the proposal made in this thesis can be carried over to Breton is an issue.<sup>1</sup> I shall leave such issues open. Certainly further research into LVM phenomena is needed.

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<sup>1</sup>However see Fanselow (2003a) for arguments against the V-in-C hypothesis.

## Chapter 7

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